

# *The* September Accounting Review

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Accounting in the Engineering Curriculum . . . *R. A. Stevenson*

Teaching of Accounting in Schools of Engineering . . . . .  
*James C. White*

Problems in Presenting the Financial Condition of an En-  
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tion . . . . . *H. G. Guthman*

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The Importance of Replacement Value . . . . . *Fritz Schmidt*

The Relation of Taxation to the History of the Balance Sheet  
. . . . . *B. Penndorf*

The Accounting Exchange  
Homer E. Gregory, O. K. Burrell and A. C. Littleton.

Reviews

University Notes

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INSTRUCTORS IN ACCOUNTING

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September

# The ACCOUNTING REVIEW

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# The Accounting Review

VOLUME V

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## ACCOUNTING IN THE ENGINEERING CURRICULUM

R. A. STEVENSON

ACCOUNTING HAS BEEN offered in some form to students in engineering schools for at least twenty years. It is only recently, however, that serious consideration has been given to this subject as an integral part of the required curriculum. Prior to 1920 there were relatively few schools that had introduced any of the subjects of a general business character into their programs. In most places economics and accounting were listed as electives in programs that were so filled with required technical courses that little opportunity was left for the student to browse around in other fields.

The fact that engineers were entering positions of administrative responsibility in which their technical training was not directly applied, brought to the attention of engineering faculties the need for some adjustment in their established curricula. It was a natural consequence of the rapid development in the technique of production in the early part of the twentieth century that engineers should find themselves in management positions in increasing numbers. Credit for most of the improvements giving rise to mass production methods must be given to engineers. Factory management by the individuals responsible for its development was to be expected.

The training which they had received in the engineering schools, however, left much to be desired in adjusting themselves to the new situations. A knowledge of the fundamental sciences and their application to industrial processes was not sufficient. Newer technique in the science of manage-

ment, cost accounting, control systems and budgets were subjects about which they knew but little. Many of those in practice, realizing this situation, enrolled in evening courses in schools of business administration as a means of supplementing their earlier training. Most of the evening schools of commerce located in the larger cities enrolled numbers of engineering graduates in their courses.

Concurrently with the development of modern management methods in industry, a number of highly specialized groups arose from the ranks of engineers. They termed themselves *industrial engineers*, *management engineers* or *scientific managers*. These groups were not accepted by the older professional associations as valid engineers. The movement for specialists in management engineering did not, as a result, secure the support of engineering schools. There are a few schools, it is true, that offer courses in engineering administration or industrial management but so far these have not been of far-reaching effect.

The collegiate Schools of Business started their phenomenal growth about the same time as the movement for industrial management in engineering and largely for the same reason. The first call for business training came from concerns that needed trained accountants and cost analysts. Somewhat later, the schools of business began to give more attention to the fields of marketing and finance which at present occupy a considerable part of their attention.

The field of management in factory organization appears to be a battleground for the graduates of the two types of institutions. Schools of business are preparing students in the techniques of accounting, personnel administration and scientific management systems with a view to preparing them for management positions. Engineering schools, on the other hand, are training their students in the basic and applied sciences for positions in the production field and with the ultimate objective of entering the management field. Ultimately one or the other, or a combination of the two programs will prove to be the most successful as a training program. At present it is not at all evident that either one has the inside track.

That the engineering profession is alive to the situation is evident from an examination of the proceedings of the meetings of the Society for Promotion of Engineering Education during the past few years. A standing committee on Industrial Engineering reported to the Society in 1928 giving its recommendations for the training of engineers with a background in management. After reviewing the situation in industrial management over the past twenty years, the committee sets forth its opinion that "Colleges of Business Administration cannot impart in its entirety the correct background." The committee further states that, "In the Colleges of Engineering it would seem that the standard courses are inadequate as regards certain types of industrial work. Engineers in increasing number are entering the field of administration in industry and are using less and less of their training in specialized designed courses." On page 60, bulletin No. 3 of the Board of Investigations and Coördination of the S.P.E.E., is given a chart showing the distribution of functions performed in industry. Under administrative and managerial we find a steady increase in the percentage of graduates engaged in primarily administrative work. As the length of time following graduation increases we find a corresponding decrease in the pri-

marily technical work over the same periods.

"In view of the reasons just stated, it would seem that a fusion of standard Engineering courses and Economics or Business Administration would more nearly meet the demands of modern industry. This fusion cannot be accomplished through specialized courses in Colleges of Business Administration, nor can it be accomplished through appended courses in Economics for Engineers. In view of the rapidity with which Engineering graduates drift out of the purely technical work into the administrative, it would seem that Colleges in Engineering would be justified in doing two things:

1. Cut down the proportion of strictly technical and design courses in all standard branches of Engineering.
2. Introduce courses setting forth fundamental factors included under the following heads:
  - a. Industrial Statistical Method.
  - b. Industrial Relations
  - c. Accounting
  - d. Industrial Economics
  - e. Management"

Several other quotations might be cited from papers delivered at meetings of the S.P.E.E. which emphasize this same viewpoint. It is evident that the engineering schools are coming to the belief that it is their function to train students for management positions. Furthermore, it is their belief that the standard courses in collegiate Schools of Business are not adapted to their needs.

It is not the purpose of this Association to discuss all of the courses involved in such a program. We are concerned only with the accounting courses. It seemed appropriate to me to present this general background as a basis for such a discussion.

The accounting courses in engineering should be a part of a management training program fitted into an adjustment of the curriculum of the existing courses in me-

chanical, electrical, civil and chemical engineering. Is there a special brand of accounting for this purpose or will the existing courses in the general business curriculum meet the needs? If we look to the engineering faculties for our answer, it is clear that specialized courses are required.

I am not sure as to just why the S.P.E.E. committee came to the conclusion that the courses should be built up within the engineering colleges. It may have been based upon experience in some institution. Perhaps we can hear of some experiences at this meeting. It may also be the result of a conviction that accounting is one of the techniques of management and since management is a field of engineering, accounting should be taught by engineers.

I have taught accounting to engineers in three different institutions. In each case the course has been adapted to meet local conditions. It happened in each case that a very limited amount of time was allowed to the subject—much less than was devoted to the course in principles of accounting for business students. It seemed to me that under such circumstances, the most important aspects of the subject to present were principles and not technique. Accordingly, very little time was devoted to laboratory practice work. Most of the time was devoted to statement analysis.

At the end of the course the student had very little knowledge of the technical processes of keeping records but he had obtained considerable drill in analyzing balance sheets and income statements.

It is obvious that something must be omitted from our standard principles courses if the time allotted is restricted. It is also clear that the engineer will not make use of his accounting training directly by being employed on books of record in a concern. If he does ultimately attain a position of managerial responsibility, he will then require some knowledge of accounting statements. If this knowledge can be imparted without first giving him practice work on the details of technique, that would seem to me the proper procedure.

The accounting instructor is in somewhat of a dilemma in this situation. Presumably his courses are an integral part of a training program for management both in the School of Business Administration and in the College of Engineering. In one he is given ample time to cover the subject in the way he considers proper, in the other his time is limited. While this presents a dilemma it also presents an opportunity to experiment. With two types of management training under way to meet new demands of industry an opportunity to contribute to both experiments should be welcomed.



# TEACHING OF ACCOUNTING IN SCHOOLS OF ENGINEERING

JAMES C. WHITE

IT WAS NOT SO LONG AGO that debits and credits, and the like, were to be found for the most part in the vocabularies of bookkeepers. More recently, especially since the advent of so-called scientific management, debits and credits have been called upon to an increasingly great extent to furnish the facts upon which the decisions of modern industry are made. To supply adequately trained personnel to fill positions in this enlarged province, courses, curricula and schools of accountancy have been established. From these schools have come specialists for private and public practice; they have been of value to many who found their work in other phases of economic organization than accounting; at least, they have been beneficial to varying extents to everyone in the conduct of his personal financial affairs. Recognition that economic success depends upon the application of sound accounting principles, in addition to sound judgment and hard work, is much more widespread today than in the past.

Engineering, to me at least, has always suggested handiwork; the engineer was a master manipulator of the physical science on a fine and grand scale; he it was who tore loose from nature her secrets and powers, and harnessed them for the benefit of humanity; he has provided the projects for the work of artisans of all descriptions. The building of the pyramids, the digging of the Panama Canal, the construction and operation of giant electric power generation units and transmission lines—these were the works of the engineer.

It appears, however, that the scope of the engineer is changing. I remember my surprise when, not so long ago, I read of a course in Money and Banking as a requisite in the curriculum of a leading engineering college. Today's engineer must not only know his chemistry, physics, and

mathematics; he must also be familiar with finance, labor problems, and accounting. One finds the engineer as the chief executive of many successful organizations. In such a capacity, he must be more than the master craftsman; he must be the able administrator of functions whose technologies are widely different.

But, one also may find chief executives, just as able, just as successful, drawn from the fields of finance, personnel, sales, and accounting. . . . The chief executive, regardless of which channel led him to the top, needs diversification to supplement his specialized training and experience. . . . Too often the affairs of an organization are administered by a chief executive lacking in diversification; too often he sees only one side of the problem—until it is too late.

From the time he is born, every native citizen of this country has before him the possibility of being elected President. In the business world, can it be said that everyone more or less fills his present position in view of the possibility of becoming the chief executive of his organization. If we look about us, there hardly seems to have been a measuring stick by which executives are chosen, other than the capacity to rise above the ranks. . . . Partly for this reason, and partly because business is demanding more adequately trained personnel for major executives, and partly because educational organizations are alert to these demands, one finds fields of specialization or concentration plus diversification, in our schools.

By implication, we are now touching upon the kernel of our problem. Many of our schools are attempting to prepare for the ultimate success, the ultimate job, the ultimate filling of the president's chair. Take a modern liberal engineering curriculum, and compare with it other curricula from regular business administration

schools, and other non-commercial schools; if each were not properly labelled in advance, the inexpert judge may have difficulty in telling wherein they are different. So the accountant studies some problems of engineering, and the engineer studies some finance and accounting.

Now there is nothing wrong with a person educating himself as broadly as his capacities will permit. But it is the growing tendency of educational institutions endeavoring to accomplish more or less the same result under different names that is raising the problems. And the process of cross-breeding is by no means slackening; it is increasing, if anything. Just a few weeks ago, a prominent midwestern university announced a six-year program of study combining engineering with law. What next! Following this, it might not be difficult to imagine the announcement of such a combination as "Modern Studies in Plant Sculpture linked with An Intensive Examination of the Law of Marginal Utility." And the graduate of such a program, what would he be?

Take the graduate of a modern school of engineering; what is he? Is he an engineer or something else? I know of a large company in Chicago with an official entitled: "Engineer-Accountant." Now just what does that mean? A few months ago, I met a former college-mate; he told me he was Sales Engineer with so-and-so. What do titles mean anyway? There seems to be a woeful lack of uniformity in the philosophy of business organization. According to what lines of division are the functions of industry, commerce, and business identified? When is an engineer an engineer, and when is an accountant an accountant; or something else?

Teaching of accounting in schools of engineering is thus only one phase of a broad problem. In even a brief discussion there are several questions to be raised. These may be stated as follows:

1. What are the respective functions of engineering and accounting, as a matter of organization?

2. Granted that a knowledge of accounting is of value to the engineer (professionally), just what parts of the field should be included?

3. Given the subject matter, what methods of instruction should be used?

An answer to the first question above depends partly upon the point of view one may take. It is essentially a question of organization philosophy; and of these there are many. Were this a more extended paper, it would be in order here to review some of these. As it is, may I present the point of view which seems most preferable to me. . . . Beginning with the entrepreneur, it is his function to assemble the necessary units of materials, capital, and labor, guide them in the processes of production, and assume the risk incident to his enterprise being a success or a failure. Breaking down the entrepreneur, as a fundamental economic factor in production, into subsidiary functions, there are: Administration, management, control.

The function of administration deals with matters of the purpose for which the enterprise exists, the objectives to be accomplished, policies by which objectives are to be accomplished, the setting-up and coordination of an organization to do the work.

The function of management deals with matters of technology: the employment of materials, processes, and methods, to achieve desired results.

The function of control deals with matters of measurements: recording the activities of management, presenting reports on the effectiveness with which management has attained its objectives, interpreting the past and forecasting the future as an aid in the statement of new objectives.

Now engineering clearly falls under the general function of management; yet management is more than engineering. To give a general list of the fields of management, there are in broad general terms: finance, personnel, public relations, purchasing, traffic, storage, sales, design, production. Certainly engineering is most closely re-



lated to production, rather than to the others; and there is where it belongs. Yet production management and engineering are not parallel terms. The engineer solves technical problems of design—of product, of machinery and equipment, of plant, and of operation—but the production management must coördinate these, and coöperate with the managers of finance, personnel, public relations, purchasing traffic, storage, and sales, in order to keep production going in balance with the other units of the organization.

Accounting clearly falls under the general function of control; yet control is more than accounting. At best, accounting can only measure the results of management due to internal conditions; it can not measure the influences of external conditions. The field of internal control may include accounting, statistics, budgets, and the management of clerical activities. Accounting forms the official financial record of the past history of the business. In itself accounting can not predict, but from its records statistical data may be obtained which may aid materially in forecasting the future.

Now what is the connection between these two—engineering and accounting? The engineer has an objective to attain—the design of a tool, a machine, a finished product, a plant, a manufacturing process; the choice of materials, the lay-out of jobs; supervision of production and maintenance—all to meet certain specifications. The decisions which he makes with reference to expenses and capital expenditures are often among the most sizeable items in the company's affairs. It is the function of internal control to measure the results of his decisions in terms of a standard previously accepted as being capable of accomplishment. The budget has set the standard and forecasted plans of the details by which the attainment of that standard has been sought. Accounting makes this measurement in terms of debits and credits that are reflected in the Balance Sheet and Statement of Profit and Loss. Statistics makes

this measurement in terms of central tendency, deviations, correlations, percentages of error, and the like. We might pause at this point to consider some relationships between engineering and budgets and statistics, but since our topic deals primarily with the relationship between engineering and accounting, we must confine ourselves to that.

It is fair to say that engineers endeavor to make their designs and construct their projects in the most economical manner, so that they give the maximum results with the least expenditure of time, money, and effort. The engineer whose decisions are wisest in this respect is the most valuable. Whether his decisions are wise or foolish may be found somewhere in the accounting records, and may appear on the final statements. The engineer who is able to foresee the results of his decisions upon the financial records, and possibly the ultimate effect on the net worth of the company, is able to make his decisions most wisely. Therefore, a knowledge of accounting is of value to the engineer.

Granted that a knowledge of accounting is of value to the engineer, just what parts of the field of accounting should he know about? This may be answered in several steps. First, the decisions of the engineer may be found in the design, construction, and maintenance of fixed capital and equipment, etc., used in the productive processes. Second, the results of his decisions may be found in the manufacturing cost records. In the third place, he should have a general understanding of the relationships among assets, liabilities, net worth, costs and incomes, in order to be able to read a Balance Sheet and a Statement of Profit and Loss. Fourth, an understanding of the nature of debit and credit, as applied in problems of general accounting, as a basis for; Fifth, a concise study of the elements of cost accounting and control.

With reference to our third problem, there are also several points to be made. Given the subject matter, the methods of instruction to be used depend upon: first,

the amount of time in the engineering curriculum to be devoted to the study of accounting; second, where in the engineering curriculum is the study of accounting to be placed; third, the nature of the other subjects comprising the engineering curriculum.

I shall not burden you with a statistical examination of the present practices with reference to these points. Each of you, I presume, is in position to make such an investigation independently for himself. It is merely a matter of studying the published catalogues of the schools desired. It is safe to generalize, however, that the practices are not uniform. Whatever contribution I may make must be drawn from my own experience, particularly from the work in which I am at present engaged.

The students at our school carry a load on the average of between thirty and forty hours per week. This is divided approximately half and half between laboratory and class room work. It might be added also that the school is operated on a co-operative plan—the students spend six four-week periods in school and six four-week periods at work on a job, each year. The work on the job is very closely coordinated with the work in school, and the two together form a continuous sequence of training. . . .

This year we are spending five hours per week on accounting and cost control. Last year it was four hours per week, and there is the possibility that it may be extended to eight hours within a year or two. This is given in the senior year, and is preceded by the following non-technical engineering subjects: Economic History, Economic Organization, Principles of Economics, Labor Problems, Principles of Statistics, and Principles of Industrial Organization. Given also in the senior year are: Principles of Industrial Management—Lectures: Industrial Management Problems—laboratory; and Business Law.

By the time the student becomes a senior, he has had a well-rounded training and practical experience in the principal de-

partments of modern manufacturing plants. He is at a distinct advantage over the typical college student who usually takes his first course in accounting in his second year. The content of a course in accounting for a student of this type could take a great deal for granted, leaving more time to spend on essential principles.

The course I am giving at present has three objectives: first, to acquaint the student with the fundamental accounting operations to arrive at a Balance Sheet and Statement of Profit and Loss; second, to consider the principles of cost accounting, and give some practice in handling a cost system; third, to consider some of the more important managerial uses of records.

Now I know this seems like a rather large order. But I venture to say that if each of you should closely examine your own courses, you would discover a great deal of material, which, while of undoubted value, could be removed without seriously affecting the development of fundamental accounting processes. This done, I have been able to start a class of thirty-five students and in one month's instruction (twenty-five hours) have carried them through a complete set of books, involving special journals and controlling accounts, adjusting entries, the Work Sheet, the preparation of the Balance Sheet, and the Statement of Profit and Loss, and closing the books.

In the second month's work, the student is carried through an introduction to partnership and corporation accounting (which, being covered in one week, cannot hope to be very much in detail); during the second and third weeks of the second month, the student designs an accounting system for a small company, enters the transactions for one month, and closes the books; in the fourth week, a study is made of the analysis of statements, principally through the ratio method.

After being thus grounded in the fundamental operations and problems of general accounting, the student spends approximately two months on a cost-account-

ing set. This set would require from three to four months were it not for the fact that the students, having already had manufacturing experiences, do not need as much explanation as otherwise would be necessary for other students.

For the remaining part of the year's work, a study is made of statistics drawn from accounting records, the construction and operation of budgets (especially for manufacturing plants) and organization for internal control, developing the points of coördination between administration, management, and control.

As for the actual methods of instruction used, considering the fact that the students are primarily interested in problems of engineering, the way is open to make the instruction authoritative. This does not necessarily mean that the instructor should be dogmatic, but merely that he should give his students approved methods accepted in modern practice, with directions and instructions accordingly. It is my own experience that the engineer (as an accounting student at least) works best when he is given a principle, a given situation, adequate working information, and an assignment to work out his own solution. As I

see it, there is no place in the teaching of accounting to engineers to argue over the merits or demerits of one point as against another. Needless to say, also, the work progresses much more satisfactorily when a definite assignment is given for each day, and the student held rigidly to the schedule. This is facilitated when the text material is loose-leaf, and issued separately for each assignment.

By way of conclusion, may I submit:

1. That the technical engineer has found himself called into major executive positions, and among others, has need of an understanding of the fundamental problems and processes of recording and analyzing business transactions.

2. That the subject matter at present given to engineers in the study of accounting, at present lacking in uniformity, needs the benefit of a job-study to determine what is most vital.

3. That newer and better methods of instruction be sought after, and:

4. That text material, based upon 2 and 3 above, more suitable for presenting instruction to engineers, now sadly lacking, presents a new field for constructive writing.

# ACCOUNTING IN THE LAW SCHOOL

JAMES L. DOHR

**E**FFORTS ARE BEING MADE at Columbia University to correlate the subjects on law, economics and business. These efforts include, among other things, an attempt to introduce the subject of accounting in the law school curriculum.

A good deal of difficulty in arriving at any sort of agreement as to what phases of the subject we should teach, what methods we should use, and what the content of the various courses should be is constantly met with. I have, at various times, heard it said that much of our difficulty was due to the fact that accounting is a comparatively new subject. I have also heard it suggested that the older subjects like law and medicine were free from much of this difficulty. However, I am afraid that there is not very much truth in that proposition. As a matter of fact, the curriculum of the School of Law at Columbia University has been practically revolutionized in the past five or six years. A comparison of the law school catalogues of 1925 and 1929 will indicate the fundamental nature of the changes which have been made, and I do not believe that the end is yet in sight.

In this connection it may be well to mention the so-called "case method" of teaching law. If inquiry is made of the members of the Faculty of the Law School as to the method which they use in teaching law, I think they will reply that they are using the case method. This is a good deal like saying that the United States is a prohibition country. Of course it is a prohibition country. Nobody disputes that. The only question is when is prohibition going to start. If you will investigate the situation among the students of the Law School, you will find that a very large percentage of the students are studying text-books and that many a case is mastered by the reading of what some text-book writer has said about it.

Some years ago a number of members of

the Faculty of the School of Business at Columbia, of which I happened to be one, entered the Law School to study law. The bringing of their knowledge of economics and business to bear upon the various law courses resulted in many interesting situations. For instance, in some of the old English cases a tenant was held liable for the destruction of trees on the leased property. These cases had been explained on the ground that the destruction of the trees destroyed the beauty of the estate. One of the School of Business faculty members pointed out that at the time of these decisions there was a shortage of ship timber in England, and that it was therefore possible to explain the decisions on economic rather than aesthetic grounds.

The same thing occurred in connection with accounting. For instance, in the law of insurance, it was taught that after a fire loss the insurance company was under a duty to pay the owner of the destroyed goods their cost plus the profit which the owner might have made had he been able to sell the goods. Upon reading the cases which were supposed to sustain this proposition, I found that the rule as stated by the courts was to the effect that the insurance company must pay an amount equal to the opening inventory, that is the last physical inventory prior to the fire, plus purchases down to the time of the fire, minus sales down to the time of the fire, *plus the gross profit during that period*. The lawyers took the statement "plus gross profit" as a basis for the rule that the insured was entitled to profits. It is readily seen that the phrase has no such meaning, and that the addition of the gross profits in that formula is necessary to determine the *cost* of the property destroyed.

While I was attending the Law School, I took part in several experiments designed to test the possibility of teaching law through the medium of accounting data.

For instance, in the law of partnerships, we found that many of the rules of law could be illustrated and mastered to advantage on the basis of accounting facts. The experiments seemed to show that there were numerous possibilities along these lines.

Shortly afterward, the Schools of Law and Business initiated a series of joint seminar courses designed to cover certain subjects from the accounting and legal viewpoints. For instance, a seminar in marketing was established, open to law and business students, in which the subject was approached from the legal, economic and business viewpoints. While there was no seminar in accounting, the experience with other subjects is of direct interest to us. As a matter of fact the seminar idea was not, in my opinion, very successful. While the enrollment included students of both schools, almost invariably one group or the other predominated in the discussions with the result that the course became either a law or business course, usually law, in spite of anything which could be done to avoid such a situation.

At the present time the Law School is giving a course in accounting as part of its curriculum. Enrollment is not compulsory. In the first year approximately 15% of

the students in the Law School enrolled.

In this course the instructor is avoiding the teaching of what I may call the "mechanics" of accounting. In other words, he makes no effort to teach such things as postings, trial balances, etc. The method tentatively adopted is the presentation of problems with accounting data whose solution involves an application of rules of law. For instance, one problem states the law in a particular jurisdiction on the payment of dividends. A group of accounting facts is then presented and the student is required to determine whether the corporation can legally pay a dividend. To arrive at the answer, the student must examine the accounting facts, sort them out, classify them, and set up a balance sheet from which he draws his conclusion as to the legality of the proposed dividend payment. The experiment is still too young to permit very definite conclusions as to its usefulness. I believe, however, that the idea is a sound one and that we may take a measure of satisfaction from the fact that the Law School has definitely recognized the necessity of an accounting course. I am sure that it is only a question of time when it will become a very important and useful course in the Law School.



# PROBLEMS IN PRESENTING THE FINANCIAL CONDITION OF AN ENDOWED COLLEGE OR UNIVERSITY

IRA N. FRISBEE

**P**ROBLEMS ENCOUNTERED in presenting balance sheets for business enterprises have received the extended consideration of instructors and students of accounting. Discussion has often been animated upon questions of balance sheet classification and terminology. What items to include under current and what under fixed assets, when a liability is fixed and when it is current, what is capital surplus and what is earned surplus—these and many other specific questions have furnished the subject matter for oral and written discussions and controversies.

Notwithstanding this academic interest in business balance sheets, there has been scarcely any consideration of balance sheets for educational institutions. During the past thirty years many colleges and universities have introduced into their curricula courses in accounting principles and methods for business enterprises, but many of these same colleges and universities have not developed adequate methods of accounting for their own transactions to enable them to set forth clearly their own financial position. Eight years ago, Mr. Trevor Arnett of the General Education Board, after examining the financial management and accounting of several hundred American colleges and universities, stated, "Accounting methods employed are often poorly adapted to academic uses, and in their zeal to render public service, college administrators have at times involved their institutions in financial difficulties through attempting more than they have the means to perform. Having no proper methods of accounting, they are not infrequently surprised to find their institutions in serious financial difficulties. Common difficulties of academic financing and accounting may therefore be briefly sum-

marized as follows: (1) the use of accounting systems unsuited to college needs, which fail to portray the actual financial status of the institution and, (2) the absence of a budget system which tends to keep expenditures within the limits of income."

It is the purpose of this paper to consider problems encountered in attempting to portray the exact financial status of a college or university, and more particularly the endowed college or university. The important field of college budgets cannot be considered within this paper. While it is to be admitted that much improvement in college accounting methods and in the preparation of statements has taken place in the past eight years, due very largely to the efforts of Mr. Arnett and the General Education Board, it is particularly evident that uniformity in balance sheet preparation has not yet been obtained. Among the college statements published during the last several years, many variations in the form and in the basic plan of presentation are to be found.

In preparing a balance sheet for an educational institution it will be observed that certain principles which are basic in all balance sheet presentation are applicable, whereas other principles are not. The purpose of any balance sheet is to set forth the assets and liabilities and the excess of assets over liabilities in the way which most clearly exhibits the financial condition of the institution. To do this the assets, the liabilities, and the excess of assets over liabilities must be grouped according to types. In business balance sheets it is the purpose for which the asset is held that determines the group to which it belongs. The purpose of the asset also determines its classification in a college bal-

ance sheet, but as colleges have purposes that differ from those of business enterprises, their assets should be shown under somewhat different classifications. However, this similarity in the basis for classifying assets of colleges and of other enterprises should not be applied in classifying liabilities. Business balance sheets show liabilities separately from net worth, and also divide the liabilities on the basis of maturity dates, but college balance sheets should group liability and net worth items according to the purposes for which they exist. Therefore, in college statements, both sides of the balance sheet should be arranged on the basis of the purposes for which the accounts were created. Reasons for this may be seen from a consideration of the purposes of the assets, liabilities, and capital of a college or university.

There are three main purposes which have been recognized for the assets of a college institution. Certain assets are held for use in a physical way; that is, as the educational plants. Other assets are held in the form of investments to produce income. This second group consists of the endowment assets, and they are to be maintained permanently as income producing investments. The third group of assets are those available for current purposes. That is, the assets in this third group are not held for permanent use as a physical plant or for permanent use in providing income, but are available to meet current expenses or for any purpose for which the college may desire to use them.

However, it is difficult in preparing college balance sheets, just as in presenting business balance sheets, to limit the group classification of assets to three main headings. Particularly, where there is a fourth type for which a separate classification appears desirable. This type may include assets which for the time being are not available or useable for physical plant, for endowment, or for current purposes. The use to which they will ultimately be put may or may not be definitely known. At the time of the balance sheet they may be

said to be held in trust. This group, therefore, may be classed as "trust assets other than endowment." Examples of this type will be given later.

On the credit side of the balance sheet of a college, the liabilities and the excess of assets over liabilities should be grouped according to the assets for which they were obtained. In other words, this side of the balance sheet should state how the assets were acquired. If a liability was incurred for the erection of a building, it is a physical plant liability. If it was incurred for current uses in meeting running expenses, it is a current liability. Also, the excess of assets over liabilities, that is, the capital of the college, should be divided according to the purposes for which that capital has been used. It is customary to designate the invested or accumulated capital of a college as "funds" although this is an inaccurate use of the word "funds" from an accounting standpoint.

Thus, it will be seen that a college or university balance sheet which shows the assets, liabilities, and capital or funds according to the basic principle of the purpose for which they are held is in reality a series of balance sheets. The order in which these sub-balance sheets are arranged does not appear to be of great importance; some institutions place the plant balance sheet first, whereas others begin with the endowment balance sheet and still others place the current balance sheet first. But it is important that each group be maintained in balance. Ordinarily plant assets should be obtained only from funds donated for that purpose or from unrestricted funds which have been appropriated by the trustees of the college for plant purposes. Likewise, funds given for endowment purposes, and gifts for which the purpose was not designated by the donor but which have subsequently been designated as endowment by the trustees, must be shown in the endowment section of the college balance sheet.

Just as the officers of a corporation are accountable to the stockholders for the



proper use of invested capital, so also are the college officials accountable to the donors of capital funds and their heirs for the administration of such gifts. It would seem that the moral obligation of the college executives to carry out the wishes of the donors is closely comparable with the legal obligations of the officers of a corporation. However, there is a difference in the period of accountability for plant funds and for endowment funds. It is generally accepted that gifts received for buildings and equipment are distinctly different from gifts for endowment purposes. The obligation of the college to the donor of a building or of equipment ordinarily terminates when such assets are no longer useful. Gifts for endowment, on the other hand, are accepted with the understanding that the assets will be permanently maintained for income-producing purposes, and the college is therefore permanently accountable, at least in a moral way, to the donor.

In presenting the liabilities and funds it is important not only to group them opposite the assets for which they were obtained but also to indicate the nature of the liability or fund. For example, if income from endowment funds is restricted to certain purposes, these funds should be designated as "restricted" or "special" endowment funds. If there are no restrictions as to the use of the income, the endowment fund is "general." If profits are made through sales of endowment assets, they are properly shown as endowment surplus or as an endowment reserve. If losses have occurred in excess of profits on sales of endowment assets, the result is an endowment deficit to be deducted from the total of endowment funds.

Likewise, if plant funds have been received for a specific project which has not yet been completed, the unexpended funds on hand are to be indicated on the credit side of the balance sheet separately from the fund accounts that represent expended donations. In this manner the plant funds are divided between funds which have not

been used for the purpose designated and those which have been so used.

It will be evident that the classification of the asset is not dependent upon its nature. Cash held for plant purposes is properly shown only as a plant asset. Endowment cash awaiting investment must always appear under endowment assets. Only the cash which can be used for current operations is to be shown under current assets. Also, real estate is to be included under plant assets only if used for plant purposes. If real estate is held as the result of endowment investment, it must be shown under that group. An institution may even hold real estate as a result of the investment of current assets, or real estate may be received as an unrestricted gift available for current purposes when realized in cash. For example, one institution holds real estate which is not a part of its campus nor an investment of endowment or other trusts. Part of this real estate was received as gifts without restrictions or even suggestions as to the purposes for which it is to be used. When sold, the cash realized may be used to meet current liabilities. In fact, it may be said that the purpose for which at least a part of this real estate is held is to provide for the ultimate payment of current liabilities. This particular institution has felt that the designation "current assets" is not very satisfactory in describing such an asset as real estate. Therefore, the current section of its balance sheet is described on the asset side as "undesignated fund assets" and on the credit side as "undesignated funds and current liabilities."

At first thought it would appear easy to classify plant assets and endowment assets. However, there is a problem of classification which has confronted a great number of American colleges and which has been solved in a number of ways. The problem is: if endowment funds are invested in income-producing buildings such as dormitories or dining halls, are these physical properties a part of plant or a part of endowment assets? Obviously,

since the endowment assets are used, the investment must be shown in the endowment section of the balance sheet. But is the investment a loan to building funds or are the buildings themselves endowment assets?

From the standpoint of the accountability of the college to donors of endowment, it appears not advisable to show dormitories or dining halls as endowment assets. These buildings and their equipment are essentially a part of the physical plant of a college and if they are obtained from endowment funds the asset to be shown in the endowment group should be in the form of a loan to plant funds. In other words, in order to administer endowment funds properly it should be considered that a loan has been made to the plant section of the balance sheet rather than that an investment of endowment assets has been made in physical properties. This loan, of course, should be repaid through the operations of the dormitories and dining halls, or from other sources if these assets do not produce sufficient income.

However, when the sum advanced by endowment for dormitories is shown as an endowment loan, it will also be shown as physical plant, and an apparent duplication results. In the plant section of the balance sheet there is a liability to endowment, offset, of course, in the endowment asset section by the asset "loan to plant." In order to eliminate this duplication a number of institutions deduct the liability to endowment from the plant asset group so that the net figure of plant assets does not include the sum advanced by endowment. Whichever method is followed, obviously the liability should not be covered up; the duplication in the total assets of the college resulting from showing the liability on the credit side of the balance sheet is a lesser evil than the complete elimination from the balance sheet statement of the liability to endowment.

Other difficulties in classifying college and university assets can be at least partly eliminated by the adoption of a fourth

group of assets and funds. Accountants for business concerns have found it difficult to adhere to only three groups of assets. Often a fourth group or even several additional groups are necessary. In college accounting it is suggested by the speaker that a fourth group of assets and fund accounts is not only advisable from an accounting standpoint, but is also desirable from an administrative point of view. As previously suggested, this group might be termed "trusts other than endowment."

There are times when the purpose for which a gift is to be used cannot readily be determined at the time the gift is received. No classification can be given under physical plant, endowment assets, or current assets without committing the college to a definite use which may later prove to be less desirable than other uses. Yet the college president is anxious to accept the gift with the privilege of determining its use at a later time. For example, a few years ago a certain college received some several hundred acres of real estate subject to a mortgage of \$10,000. The purpose of the gift was not specified although the donor expressed the hope that it could be used in a way which later proved impractical. In fact, this land was not particularly useful to the college as long as it was in the form of real estate, for it was essentially non-income-producing. Ultimately it was sold for \$600,000, which was just ten times the value at which it had been recorded upon the books at the time of the gift. After the time of the sale of the land, determination of the use to which the funds were to be placed was made by the board of trustees in co-operation with the donor. During the period that this real estate was held, it might be said that it was held in trust for further use.

Assets other than real estate may be accepted for which the ultimate purpose is not determined until several years after the gift is received. This is particularly true of gifts made subject to an annuity or life interest of the donor. For example, cash or bonds may be turned over to a col-

lege on an annuity basis, the principal to be used "for a suitable memorial" upon termination of the life interest. An expression as to the suitable memorial may not be made until some years after the gift is received.

Indeed, it is not advisable to obtain a definite specification of the purpose of a gift when it is not immediately available for such a purpose. To illustrate, a certain institution received a gift valued at \$200,000, subject to an annuity. If the purpose for which the principal of the gift was to be used had been definitely stated by the donor at the time of making the gift, this purpose would probably have been the erection of a hall of science. But the donor recognized that a number of years might elapse before the gift would be available for that purpose. In the interim, other science buildings might be obtained by the college so that the gift might better be used to endow professorships of science. Therefore only a general purpose of use in the advancement of science was specified, and when the fund is released it may be used for plant or for endowment according to the needs of the institution at that time.

Even when annuity gifts are received for a definite ultimate purpose, such as the endowment of a professorship, or the building of a science hall, it would seem that the ultimate purpose should not determine the immediate classification. Annuity funds are subject to the right of the donor or his immediate heirs to receive an income at a specified rate, or in the amount of the earnings of the particular asset donated. Therefore the immediate purpose for which the assets are used is to meet the annuity payments. These payments may continue until the death of all annuitants or for a specified number of years according to the terms of the annuity bond issued by the college. But during the period the annuitant receives the income, the assets are held in trust for the purpose of meeting the annuity payments—not for professorship income or for the science hall building.

Other gifts are received for definite purposes which cannot immediately be classified as plant, endowment, or current assets. For example, donors sometimes give small sums in anticipation of raising larger amounts for specified purposes. Until the ultimate sum is raised the assets are required to be invested to produce additional amounts which are added to the fund. Thus, if \$1,000 is given towards the endowment of a professorship, the earnings on this and later sums raised will accrue to the fund. In the course of ten or perhaps one hundred years, the sum will become large enough to endow the professorship. Until that time the fund is not properly an endowment fund; it is only a candidate for the endowment fund classification. In the meantime, it is a trust other than endowment.

A trust fund of a different character may occur as the result of endowment funds on which the income is restricted to certain purposes. In a given year such a fund might produce income in the amount of say \$5,000 which is to be used in the development and maintenance of a certain part of the campus. For several years it may be that only a part of this sum can be advantageously used for this purpose in each year. The unexpended balance each year must be set aside for future use. If the period of use is expected to be reached in the near future, this unused balance may be considered as a deferred credit, that is, as current income received in advance, and it may be shown under current liabilities. But if the period of use appears to be several years distant, or if it is indefinite, it would appear advisable to transfer cash from the current bank account into trust cash, invest this in income-producing assets and accumulate the fund in trust for the purpose specified.

There are several other income-credit items which present similar problems of classification, and in some instances it may be advisable to place these preferred items in trust. One college has had an experience which is probably unusual among col-

leges. During the past two years it has received cash dividends on its principal endowment asset which the trustees consider to be extraordinary. Therefore, they have ordered that all dividends above a certain amount be excluded from budget income, and they have established an "income stabilization reserve" to be used when the dividend income falls below the specified sum. In order to administer this reserve properly, the excess dividends each year are placed in trust fund assets, and the income earned from the investment of these dividends accrues to the income stabilization reserve.

Another reserve account which might be administered in a somewhat similar way is the "reserve for sabbatical salaries." The speaker has observed only one instance of the creation of such a reserve, but the plan warrants the consideration of other colleges. Each year a sum is set aside from current income to provide for future salaries of professors during their sabbatical leave, or for substitutes, which will have to be obtained to carry on their work. Undoubtedly, the transfer of such a sum from current fund assets to trust assets is a more permanent provision for sabbatical salaries.

There is an additional reserve account which is more difficult to classify, and, therefore, the speaker hesitates in mentioning it. This is the depreciation reserve. Fortunately, it is not generally used in college accounting, except for income-producing assets, such as dormitories and dining halls.

We are accustomed to regard the depreciation reserve as a deduction from the asset. If it is so regarded in college balance sheets it will be deducted from plant assets, but in order to balance the assets with the net worth and liability side of the plant balance sheet, other assets—usually cash—must be placed in the plant asset group. This procedure is recommended by one writer, the entries to accomplish this being a credit to current funds cash with a debit to depreciation ex-

pense, and a debit to plant cash with a credit to reserve for depreciation. The result is that the current operating period is charged with depreciation and it actually pays for this depreciation in cash transferred to plant assets. This method is an excellent one to provide for the replacement of the physical plant. In fact, unless cash is appropriated from current funds there is in reality no provision for depreciation, so it is essential that the cash be taken from the current budget funds.

However, there is some doubt in the mind of the speaker as to the advisability of always placing depreciation reserve cash in plant assets. As previously suggested, it is generally considered that plant assets received through donations need not be replaced in carrying out the responsibility of the college to the donor. If the college does provide a depreciation fund for these assets, it usually appears to be an appropriation of surplus funds rather than a budget expense, except in the case of plant assets constructed from endowment funds. Also, the period of time during which the depreciation fund will be accumulating before it will be used is likely to be of such duration that it is difficult to look forward to the actual use of the cash in replacing plant. During this period gifts may be acquired to provide adequate buildings so that the depreciation fund assets will never be used for the replacement of plant assets. Therefore, it is suggested that the depreciation fund cash and the offsetting reserve account should be placed in the trust group of assets and funds, respectively.

In conclusion, this paper has been written to suggest that more consideration should be given by accountants to the preparation of the financial statements of colleges and universities. The problems encountered are numerous and varied, of which only a very few have been suggested in this paper. The specific problems considered herein have dealt with the presentation of the asset, liability, and fund accounts. Particularly, it has been sug-

gested that a fourth group of assets, balanced by related liabilities and funds, is necessary in many college balance sheets, this group being in addition to the three usual classifications of plant, endowment, and current. This fourth group, designated as trust assets other than endowment, might include, among other types of assets:

1. Assets acquired as gifts for which no purpose has as yet been specified.
2. Assets not yet in a form usable for the specified purpose of the gift.

3. Assets which are not available for the purpose specified because they are subject to annuity agreements.

4. Assets acquired through gifts which are accumulating over a period of years for specified purposes.

5. Assets acquired through income which is to be held in trust because the time of use is indefinite or is in the distant future.

6. Assets placed in reserve, such as, a reserve for income stabilization, a reserve for sabbatical salaries, or a reserve for depreciation.



# INSTRUCTION IN ACCOUNTING FOR LIBERAL EDUCATION

L. L. SHAULIS

MODERN HIGHER EDUCATION is often scored for its conservatism and lack of initiative. Yet many of those in charge of this activity are experimenting with curricula and methods with the thought of improving them and adapting them to meet modern needs. The majority of faculties of our colleges believe that the curricula of their respective colleges need revision, and are working to this end.

This "willingness to change" in the conduct of higher education upon the part of our college faculties is characteristic of the spirit of liberalism in these institutions and perhaps equals that found in business, industry, medicine, politics, and in other fields. There is danger perhaps that "change" may be embraced for the sake of change just as in the conservative extreme the *status quo* may be defended for the sake of stability. In both cases the humanistic welfare which must ultimately be realized if success is to reward our efforts is neglected.

Leading educators are attempting to rationalize the present conditions under which higher education functions to develop principles, and to point out the roads of progress.<sup>1</sup> It is only by giving our best thought to these matters both as a whole and in detail that we can be sure that we are on the right track. With this in mind an attempt is here made to rationalize the relationship of accounting instruction to a liberal course of study. The lack of uniformity as to the extent and as to the type of accounting instruction offered by liberal arts colleges leads one to believe that rationalization upon this subject has not been conclusive.

<sup>1</sup> See Little, Clarence Cook, *The Awakening College*, W. W. Norton & Co., Inc., New York, 1930—Schelling, Felix E., *Pedagogically Speaking*, Univ. of Pa. Press, Philadelphia, 1929.

For the last thirty years, the addition of courses in Economics, Commerce, and Business Administration is one of the outstanding developments in the content of the curricula of American colleges and universities. Accounting has been one of the principal courses in this development.<sup>2</sup> It is found both in schools of business and in departments of economics in our so-called liberal arts colleges.<sup>3</sup> This constitutes evidence of a change in the curricula of our institutions of higher education. At the same time the established position of instruction in accounting does not preclude further changes in the light of a better grasp of the functions of higher education.

Our large universities have resolutely set about to segregate, preserve, maintain, and develop liberal education as one of their specialized functions. Also, many small colleges jealously defend this objective as their sole function. Both fear the taint of professionalism. They prefer to regard themselves as institutions for the discovery, the preservation, and the promulgation of learning; as a stronghold of truth; as "a place in which nothing useful is taught"; and as their sole purpose the intellectual betterment and progress of mankind. Have courses of instruction in accounting a logical place in this environment, or is their inclusion to be explained upon other grounds than that of their liberal educational value? Are courses in accounting offered in liberal arts departments or liberal arts colleges of a different nature or are they taught in a different manner than

<sup>2</sup> College credit was given for courses in accounting in 1900 by thirteen American colleges and universities; in 1910 by fifty-two; in 1916 by one hundred and sixteen; in 1926 by three hundred and thirty-five. Allen, C. E. in *The Accounting Review* for June 1927.

<sup>3</sup> See Campbell, James A., and Hanslein, John D., in *The Accounting Review* for June 1930.

are their contemporaries in professional schools for business training?

The principle which differentiates schools or courses of instruction is to be found in the fundamental purpose which they are designed to serve. In a professional school courses are designed and taught with the idea of preparing men for some special function or profession in life. For example, the medical college trains for the profession of medicine; the engineering college for engineering; the law school for the legal profession; and the business school for business practice. The courses offered and the type of teaching developed are designed to serve this purpose. Such schools aim to train and prepare the student for a special type of life work. Whatever else they seek to accomplish this is clearly and universally recognized as constituting their fundamental purpose.

Once the fundamental purpose or objective of, say, a three or four year training period is recognized and stated, it naturally follows not only that courses of instruction are selected to meet this purpose but that their content, point of emphasis, and method of teaching may be correspondingly modified. Courses with the same name and dealing with the same general subject matter, for example, chemistry, may be offered in a liberal arts college, a medical college, and an engineering college with a substantially different content; different emphasis as to point of view; and different methods of teaching. This principle has operated to a certain extent in the development of instruction in the subject of accounting. Schools which aim to prepare students for passing C.P.A. examinations and to train them for the profession of public accounting will offer a number of courses in accounting, each approaching the subject from a more advanced and specialized viewpoint than that of similar courses offered by liberal arts schools.

The question, "Does instruction in accounting have a legitimate place in the liberal arts curriculum?" resolves itself,

therefore, into two related parts. The first is concerned with the educational purpose of instruction in a school of liberal arts;<sup>4</sup> the second has to do with a consideration of the nature of the subject of accounting and instruction in accounting evaluated in the light of the fundamental purpose of a liberal arts education.

The purpose, and methods for its accomplishment, of a course of instruction in a liberal arts college cannot be so clearly defined, perhaps, as for professional schools. The reason for this difficulty is obvious since the purpose of the one is necessarily more general than the other. Roughly the liberal arts school is aiming to provide general training and education while the professional school aims to train and educate for a specific profession. It is seeking the discovery of truth in every field of human life without attempting to prepare the student for any special activity. Liberal education therefore may be said to be a training for the practice of living, developed by a study of man and his environment in their relation to contemporary life and of all the problems growing out of that life, with the objective of aiding youth to deal masterfully with existing conditions. The writer holds that this conception of the purpose of liberal education presented in this statement is as comprehensive as any that can be found. It may be worthwhile to test it in the light of certain more or less generally accepted theories.

Perhaps a conception of the purpose of a liberal arts education, the most remote from that expressed above, is that which emphasizes the development of the mind,

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<sup>4</sup>The writer feels that no apology need be offered for introducing the question of the purpose of a liberal arts course of instruction. Apart from its pertinence to this analysis it is of general educational interest. The bulk of the students in American institutions of higher education are enrolled, and because of limitations of demand for the professionally trained, will probably continue to enroll for this course. Moreover, those of us who are laboring as teachers in these institutions need to have an understanding of the larger purpose which we endeavor to serve.



refining its temper, accustoming it to fruitful labor, and quickening its apprehension. There is no one who will not immediately commend this purpose. In fact all educators and schools, professional as well as liberal arts, lay claim to it. It is hardly a purpose which will serve therefore to differentiate one from the other. Courses in Latin and Greek may be excellent material for the accomplishment of this purpose while they cannot claim a monopoly of such material. Most readers of this article will consider a study of accounting worthy of inclusion upon these grounds. In any event those most insistent upon this purpose will admit that intellectual development is not solely for its own sake but for the sake of some type of human well-being. It is expected that the intellect once trained will play a part, and perhaps a great part, in contemporary life.

Other theories of the purpose of a liberal education merely emphasize in one or more respects the general and fundamental purpose herein accepted. They emphasize the training of the student for an understanding of himself, of his environment, or both; or for affording the student an opportunity to understand something about all of the various phases of life in order that he may choose intelligently his life activity. Any such purpose or purposes are clearly subordinate to and a part of our fundamental purpose of a school of liberal arts and lend support to it.

The answer then to the question of the validity of instruction in accounting in a liberal arts program of study is obvious. Accounting may be described as intelligent counting. It is as essential in the determination of the facts of economic and business experience as are sound and adequate laboratory and field methods in the field of natural science. If liberal education is training to deal masterfully with the problems of contemporary life, in which economic and business experience plays a large and vital part, accounting is a legitimate and necessary study in the program.

The case for the study of contemporary

life, including accounting, as the content of a program for liberal education is further strengthened by the obvious defect of the so-called classical theory and its usual emphasis solely upon intellectual development. The purpose of our program includes more than mere intellectual development; it emphasizes the individual as such and as a functional entity; it is concerned with his emotional as well as his intellectual reactions to contemporary life; it requires a wholesome and a rational point of view and training in ways of thinking about and handling contemporary problems. A mere study of the classics cannot contribute these essentials to a liberal education.

The logic in support of accounting in a liberal arts college seems to be clear and conclusive. The question concerning what type of instruction in accounting conforms to the purpose of liberal education, and how much of it shall be taught, still remains for consideration. The writer has no fixed ideas as to the definite content and extent of such courses. As regards this phase of the discussion an attempt will be made merely to state the problem in the light of the fundamental purpose of liberal education. The writer believes that instruction in accounting in some liberal arts colleges has developed and is being carried on in a manner not wholly in harmony with the principles of liberal education. In some cases the number of courses, their content and type of teacher employed would seem to indicate a professional rather than a liberal educational purpose. It is clear that a liberal arts course in accounting can be developed with a type of text and problem material and taught from a point of view and in a manner to contribute most toward the purpose of liberal education and least toward a professional purpose. Concerning the teacher it is clear, for example, that he should have a rich background in economics and probably should not be a certified public accountant.

Anyone, however, who will take the trouble to study the types of instruction

in accounting offered in our American colleges and universities cannot fail to note a more or less well defined difference in the instruction in this subject in the liberal arts college from that found in professional schools. The writer believes that the subject of accounting, along with many other newcomers in the liberal arts curriculum, has not been introduced in most of our liberal arts colleges with a professional intent, but rather as a result of a feeling of the inadequacy of the traditional liberal arts course of instruction to meet the modern needs of liberal education. There can be no doubt of the contribution of instruction in accounting toward the purpose of liberal education, the purpose of developing and training the student as a functional entity in the field of contemporary life. Further development and progress in the organization and teaching of courses in accounting in our liberal arts colleges in the light of this fundamental purpose is necessary and perhaps inevitable. Room for improvement in this respect is not limited of course to instruction in accounting.

Teachers of accounting in many liberal arts colleges where the liberal purpose of instruction in this subject is recognized, fearing perhaps the charge of professionalism, have generally avoided a type of professionalism which flourishes in many liberal arts institutions. The writer refers to the tendency of teachers in liberal arts colleges to order their courses and activities toward developing specialists in their particular fields rather than toward developing and training the student for a rational and intelligent reaction to contemporary life.

The significance of the analysis set forth in this article depends in the main upon the validity of the differentiation of the purpose of the liberal arts college from that of other schools and colleges. Instruction in accounting is a worthy aid toward the realization of the fundamental purpose of the liberal arts college. Teachers of accounting in liberal arts colleges may well consider ways and means for still greater enhancement of the value of instruction in accounting in the liberal arts program.

# ACTUARIAL VERSUS SINKING FUND TYPE FORMULA FOR VALUATION

H. G. GUTHMANN

**A**FTER THE APPRAISER has made a satisfactory estimate of the future receipts from a given property, the mathematical aspects of the problem of valuation remain. "Principles of Valuation," by Grimes and Craigie, is a work devoted, primarily, to this mathematical side and is a welcome addition to the relatively modest literature available to the American student in this field. The discussion of the financial wisdom of the various techniques is rather brief and would seem to require revision if the practitioner is to apply their method logically and satisfactorily.

## I

The objections to all sinking fund type formulæ are generally over-ridden with too great ease. This fault involves a fundamental question of financial policy, which it would seem is sufficient to cause the rejection of all sinking fund type methods of valuation and the use of the so-called compound interest actuarial method for all commercial situations save those in which some contractual or statutory requirement actually calls for a *bona fide* sinking fund.

A simple illustration of the difference in philosophy between the actuarial and sinking fund formulæ may be had by noting the two ways of looking at a not unusual personal loan situation. A loan of \$100 is paid in weekly installments over a period of one year with \$8 added for interest and charges. The nominal charge is 8 per cent. But since the loan is reduced week by week as the year passes the average loan is \$50 rather than \$100, and so the real rate must be had by comparing the charge of \$8 with the actual average unpaid balance of \$50, or sixteen per cent. Modify the arrangement by calling the repayments "deposits" and allow 3 per cent interest on them to the end of the year

when they are used to cancel the loan and still 8 per cent is the *nominal* and not the *real* rate although the sinking fund method adopts the latter point of view. The more exact computation, which is analogous to the actuarial technique, compares the net interest cost of \$6.50 (\$8 minus 3 per cent on average deposit balance of \$50 for year) with the average loan of \$50 and arrives at a rate of 13 per cent.

Before substituting the more exact arguments with respect to the comparative merits of the two types of valuation formulæ, their character will be stated and illustrated.

## II

Under the compound interest actuarial premises the capitalist receives at the end of each year simple interest upon the amount of capital he has outstanding at the beginning of each year. Whenever the receipts for any year are in excess of the interest payment, the excess reduces his outstanding capital upon which he earns a return the following year. Whenever the receipts for any year are insufficient for the payment of interest, or a loss occurs, the total deficiency in the given year, is added to the amount of capital outstanding upon which a return must be earned in the succeeding years. Under this "actuarial" method of computation the receipts in the last year are just adequate to pay the interest on the capital at the beginning of that year and to repay that capital one hundred per cent. An illustration may be drawn from Grimes and Craigie (p. 24). In the table shown below, ten thousand dollars is received over a period of 10 years in varying amounts, as shown in column D. The present worth of these ten sums discounted at 10 per cent is \$6,128.56 which is the capital outstanding at the beginning of the first year (column A). Ten per cent of this investment is \$612.86 (column

F) and is the portion of the \$1,000 received at the end of the first year to be regarded as interest. The balance of \$387.14 is capital return (column G) and is subtracted (column D) from the capital outstanding at the beginning of the year to show capital outstanding at the end of the year upon which the capitalist will expect a 10 per cent return the following year.

The third year illustrates the procedure when the receipts are insufficient to pay in-

## III

The distinguishing feature of all sinking fund valuation methods is that no capital of the original commitment may be returned to the investor during period of investment. A sinking fund is created, or assumed for the purposes of valuation, in which any capital return from receipts is placed. The capitalist is assumed to invest the computed present value of the expected future income at the outset and this value is returned by annual payments to a

TREATMENT OF AN IRREGULAR INCOME OF \$10,000 VALUED AT \$6128.56 BY DISCOUNTING AT 10% UNDER COMPOUND INTEREST ACTUARIAL METHOD OF COMPUTATION

Year	Capital Account			Income Allocation		
	Capital outstanding at beginning of year	Capital returned each year	Capital outstanding at end of year	Yearly income	Yearly interest due investor	Yearly capital return
Column	A	B	C	D	F	G
Process		B = G	A - B	Per notation	10% of A	D - F
1	6,128.56	387.14	5,741.42	1,000.00	612.86	387.14
2	5,741.42	625.86	5,115.56	1,200.00	574.14	625.86
3	5,115.56	-11.56	5,127.12	500.00	511.56	-11.56
4	5,127.12	287.29	4,839.83	800.00	512.71	287.29
5	4,839.83	1,116.02	3,723.81	1,600.00	483.98	1,116.02
6	3,723.81	927.62	2,796.19	1,300.00	372.38	927.62
7	2,796.19	620.38	2,175.81	900.00	279.62	620.38
8	2,175.81	382.42	1,793.39	600.00	217.58	382.42
9	1,793.39	520.66	1,272.73	700.00	179.34	520.66
10	1,272.73	1,272.73	000.00	1,400.00	127.27	1,272.73
Totals	38,714.42	6,128.56		10,000.00	3,871.44	6,128.56

terest upon outstanding capital. In that year the receipts of \$500 fall short by \$11.56 of making up the necessary ten per cent on the capital \$5,115.56 so the deficiency is added to the capital outstanding to give \$5,127.12 outstanding capital at the beginning of the fourth year.

In the tenth and last year \$1,400 is received from which \$127.27 is required to pay the ten per cent interest on the capital outstanding at the beginning of that year, leaving a balance of \$1,272.72 which returns the outstanding capital to the penny.

sinking fund, which, with interest accumulated at the assumed sinking fund rate, will provide for the return of the original capital at the termination of the investment period. Throughout this investment period it is assumed that the investors' commitment is fixed and that he will receive a constant return in absolute amount as well as per cent. Variations of formulae arise from variations in the interest rates assumed and in the distribution of the income stream. In general, it is assumed that the investor is to recover some relatively

high or speculative rate of interest, such as eight or ten per cent while the sinking fund is to earn some relatively low or safe rate of interest such as three or four per cent. It is the assumption of these two different rates of interest which destroy the practical utility of formulae in this class for virtually all commercial purposes. Before elaborating the criticism on this point, however, an illustration of the general tech-

use "is that sinking funds are seldom accumulated in commercial practice, by corporations, mining corporations especially, but capital is reduced through the payment of dividends without separation of the elements of interest payment and capital return." The authors continue, however, that "while this may be generally true, it is not a valid objection to sinking fund premises of valuation since it is immaterial

TREATMENT OF AN IRREGULAR INCOME OF \$10,000 VALUES AT \$5549.68, UNDER SINKING FUND VALUATION METHOD WITH TWO RATES OF INTEREST, TEN PER CENT TO INVESTOR AND FOUR PER CENT ON SINKING FUND ACCOUNT

Year	Capital Account at Beginning of Year			Income Allocation at End of Year			Sinking Fund Account During Year		
	Total capital	Portion of capital in sinking fund	Portion of capital in speculative enterprise	Income	Interest due investor	Contributions to sinking fund	Amount in fund at beginning of year	Interest earned during year	Amount in fund at end of year
Column	A	B	C	D	E	F	G	I	J
Process	From valuation formula	B = G	A - B	Per notation	10% of A	D - E	From J preceding year	4% of G	F + G + I
1	5,449.68	000.00	5,449.68	1,000.00	544.97	455.03	000.00	000.00	455.03
2	5,449.68	455.03	4,994.65	1,200.00	544.96	655.04	455.03	18.20	1,128.27
3	5,449.68	1,128.27	4,321.41	500.00	544.97	-44.97	1,128.27	45.13	1,128.43
4	5,449.68	1,128.43	4,321.25	800.00	544.97	255.03	1,128.43	45.14	1,128.60
5	5,449.68	1,428.60	4,021.08	1,600.00	544.96	1,055.04	1,428.60	57.14	2,540.78
6	5,449.68	2,540.78	2,908.90	1,300.00	544.97	755.03	2,540.78	101.63	3,397.44
7	5,449.68	3,397.44	2,052.24	900.00	544.97	355.03	3,397.44	135.90	3,888.37
8	5,449.68	3,888.37	1,561.31	600.00	544.97	55.03	3,888.37	155.54	4,098.94
9	5,449.68	4,098.94	1,031.75	700.00	544.97	155.03	4,098.94	163.96	4,417.93
10	5,449.68	4,417.93		1,400.00	544.97	855.03	4,417.93	176.72	5,449.68
Totals	54,496.80			10,000.00	5,449.68	4,550.32		899.36	

nique is given below, in which the investor is to receive ten per cent per annum upon his capital and the sinking fund to earn four per cent, the stream of income for a period of ten years being the same as that employed in the preceding illustration.

#### IV

The essential fallacy of the sinking fund type of valuation is indicated, in a recent publication, "Principles of Valuation," by Grimes and Craigue. There it is noted that one of the objections to its

whether the stockholder or the corporation makes provision for the return of capital; in fact, it is preferable that stockholders should do so individually as the amounts of their investments in the same amounts as future income will be invariable and will differ from the investment of the corporation in the same future income." (p. 176-7) The essential fallacy does not lie except indirectly in this imaginary character of the sinking fund but rather in burdening the property appraised with a high rate of interest for the whole commitment of



the investor subsequent to the first year after which year the property has produced sums for at least the partial retirement of that original capital. Whenever a given property whether it be a mine, a piece of real estate, or a bond, has returned a sum more than sufficient to pay the interest on the capital outstanding at the beginning of the given year the reinvestment of that sum should have no bearing upon the value attributed to the given property save only when a sinking fund actually exists and adds an element of risk of its own.

This point is most evident in the ordinary commercial situation when the returned capital goes not into a sinking fund but into the hands of the investor just as is assumed in the premises in the actuarial method of valuation. Whether the investor chooses to invest in government bonds yielding only a safe rate of four per cent or in speculative property yielding a higher nominal return of eight or ten or twelve per cent should have nothing to do with the valuation of the property being appraised. Indeed, from the economists' standpoint any such yield differences are due to estimated risk and so presumably are nominal differences and of no account on the average and in the long run. And yet variations between valuations will appear depending entirely upon the differential established between the speculative rate of return to be paid the investor and the safe return to be assumed on the accumulating sinking fund. So long as the safe return is less than the speculative return, the sinking fund method of valuation will always give a lower valuation than the actuarial method. Only when the assumed return earned by the sinking fund and the speculative return are equal will the sinking fund method and the actuarial fund methods give the same result. In the two illustrations above, the sinking fund method gave a value of \$5,450 where the actuarial method gave \$6,129.

This troublesome difference lies in the fallacious premise of the sinking fund method of computation that the initial in-

vestment shall be regarded as constant even though the capital is returned to the investor from time to time during that period in the guise of a hypothetical sinking fund. In effect the appraiser assumes that the property must pay the speculative rate, say ten per cent, not only upon the capital committed originally but also the difference between the safe rate and the speculative rate upon this imaginary sinking fund from the date a given sum is turned into that sinking fund until the end of the investment term. This absurdity becomes most apparent (1) when the sinking fund is assumed to earn a much lower return than that paid the capitalist, (2) when a large fraction of the initial investment is returned early in the life of the undertaking, and (3) when the sums received during the later part of the investment period are relatively small and spread over a long time interval.

An illustration of this absurdity is offered in what the aforementioned authors give as a second objection to the sinking fund method although the objection clearly is of the same breed as the first one mentioned above but clothed in different terms. The illustration cited involves the valuation of deep coal seams which mining operators were expected to reach in 80 years and from which equal annual production was expected for a subsequent period of thirty-six years. Under the sinking fund formula the evaluator assumed a ten per cent yield on the investment, which was compounded during the first eighty year period, and a three per cent earning rate for the sinking fund used in valuing the income receipts for the thirty-six year period. The value determined on this basis was approximately 0.0117 per cent of the amount of the expected income in comparison with the value of 5.7 per cent of the expected income had a three per cent rate of interest been used in discounting to present worth. The authors dismiss this case by stating that the error should properly be ascribed to poor judgment in the selection of the speculative rate of interest

rather than to an unsound mathematical formula. But whenever the safe rate of interest assumed for sinking funds is lower than the speculative rate of interest used and the period of sinking fund accumulation runs for any considerable length of time, the sinking fund method of appraisal will understate the value of the property.

Interestingly enough the only type of sinking fund formula which meets the objection just raised is the new type of three-interest-rate formula developed by the authors. This invention is only applicable for situations in which the sinking fund actually exists and its virtue is that it practically goes over to the actuarial premises by assuming the capitalist shall receive, not a constant return on original investment, but a return at a speculative rate on any capital outstanding in the property and a

lower semi-speculative (or possibly a "safe") return on the amount held in sinking fund. The third interest rate is that which is actually earned by the sinking fund. The theory accounting for the semi-speculative rate of interest is that the possible diversion of the sinking fund to other purposes than the return of capital, without the consent of the investor, justifies a rate of interest higher than the safe rate actually earned by the sinking fund but less than the speculative rate upon the unreturned capital.

Whenever, then, the sinking fund was controlled by the investor the "semi-speculative" rate would have to equal the actual rate earned by the sinking fund and the resulting valuation would coincide exactly with that obtained by the actuarial method.



# THE BUSINESS PERIODICALS OF GERMANY

KURT SCHMALTZ

IF ONE WISHES to make a survey for the United States of the German business periodicals, he cannot stop with a bare enumeration of them but must briefly say a few words about the development of the study of business economics as well.

Such a comparative analysis seems to me to be quite necessary, for without it one will scarcely understand the particular character of the German periodicals. The scientific study of business economics in Germany, as in the United States, still comparatively new. It originated at the turn of the century with the founding of the high schools for commerce (*Handels-hochschulen*) and was first known as Commercial Science (*Handelswissenschaft*), later as Private Economics (*Privatwirtschaftslehre*) and since 1919 as the Science of Business Economics (*Betriebswirtschaftslehre*). If one compares the science as a whole with the development in the United States, it appears remarkable that there is no similar comprehensive designation. A German studying the American literature is astonished at the strong independence of the various branches of the science of Business Administration such as accounting, cost accounting, finance, selling, and marketing.

This is not so markedly the case in Germany. Here, due to the bent of mind of the German people, one finds everything much more systematic. A German is not satisfied unless he can fit his special field in as a part of a definite system and clearly work out in every possible way the boundaries of the different fields. This rigorously systematic method of work I have not been able to find in the American literature of Business Administration. A book about finance, such as that by Lincoln, also contains the working out of selling and buying problems, a situation which would be impossible in Germany for systematic reasons. The German, therefore, works more abstractly, placing more value upon

fundamentals, whereas in the United States a certain portion of the literature is written from purely practical points of view. The American works more definitely in a limited field yet does not hesitate to reach opportunely into other fields; whereas the German sees his work always within a system, seeking to go from the special to the abstract, and seeing the part as a unit of the whole.

Two more elements of this phenomenon must be considered. In Germany the two subjects, Political Economy and Business Economics, are two widely separated sciences. This may occasionally be deplored, yet each of the subjects places value upon its particular point of view, although both are working toward the same objective. In the United States there are no sharp boundaries between economics and business economics or finance. One cannot tell whether a book on finance in the United States is to be used for business economics or political economy. In Germany a sharp differentiation would be considered necessary.

The question of "General Business Science" (*Allgemeinen Betriebslehre*) further illustrates the German principles of a commercial education. There is scarcely one student of business economics in Germany who does not read in the general subject of business besides his special field of banking, industry, or commerce, as the case may be. That is to say, he studies also that subject which gathers together whatever can be said from the fundamental business point of view about the life and organization of a business or an enterprise. I have not been able to find in the American literature such a systematically constructed general theory of business or enterprise. This, too, indicates a difference in views between the two countries.

One might object that the contrast between the working out of the study of business economics in the United States and in

Germany is not quite so sharp as seems emphasized here. Yet, fundamentally, what has been said is true. The friendly readers of this article will perhaps forgive this long introduction, but it seems necessary to make these comparisons in order to show clearly the character of the German periodicals in the field of business economics, for the above-mentioned contrast is expressed not only in the literature but also in the periodicals of the two countries.

Periodicals like "The Accounting Review" and "The Journal of Accountancy" simply do not exist in Germany, at least not as scientific periodicals. The German periodicals cover the whole field of business economics. Only recently is specialization noticeable, based upon purely practice considerations, and this, to be sure, partly under the influence of its American models.

The German periodicals can best be compared with the *Harvard Business Review*, although even there the field of finance and marketing is prominently emphasized. Some of the articles therein, would also, in Germany, be considered in the field of Political Economy.

In the following enumeration of the German periodicals only the most important technical ones are referred to.

### I. Scientific Periodicals

The magazines are arranged according to the date of their origin. The following can be said of them individually:

#### ZEITSCHRIFT FÜR HANDELSWISSENSCHAFTLICHE FORSCHUNG

Editor and Publisher—Prof. Dr. E. Schmalenbach, University of Cologne (monthly from Gloeckner, Leipzig).

This periodical was founded in its present form in the year 1906 as the first periodical on business economics, or commercial science, as it was called at that time. It considers the study of business economics, although years ago it placed special emphasis on accountancy. The articles are often the work of students from the seminars of the editors.

The periodical has from its inception cross-indexed all of the articles for the year with an index devised by Schmalenbach. This index, in the course of the years, has been changed in some of its details, but contains all the articles of previous issues. Thus the index of the past year contains the complete bibliography of the periodical. The development of this index is therefore an interesting contribution to the history of business economics research.

The year 1919 contains a comprehensive bibliography of the literature of business economics according to lines of industry. From 1925, however, this bibliographical work was continued as the "*Archiv der Fortschritte*" (see below) and more recently by the periodical "*Das betriebswirtschaftliche Schrifttum*" (see below).

#### DIE BETRIEBSWIRTSCHAFT (FORMERLY, ZEITSCHRIFT FÜR HANDELSWISSENSCHAFT UND HANDELSPRAXIS)

Publishers—Prof. Dr. H. Nicklisch, Berlin, and Prof. Dr. Obst, Breslau; Editor—Dr. Kurt Schmaltz, Halle (monthly from Poeschel, Stuttgart).

This periodical was founded in 1908. Until 1924 this and the above mentioned magazine were the only scientific periodicals of the profession of business. It takes into consideration even more definitely than the first periodical the study of business economics. At first it developed a particular note of its own in that it considered anew all of humanity and not only the business man. It also followed up the educational problems of other countries as well as its own, and published, since its foundation, valuable bibliographies of the literature of business economics. At present particular stress is being placed on actual problems in order to be of service also to practice.

#### ZEITSCHRIFT FÜR BETRIEBSWIRTSCHAFT

Publisher—Prof. Dr. S. Berliner; Editor—Prof. Dr. F. Schmidt, Frankfurt on Main (monthly from Spaeth and Linde, Berlin).

This periodical was established in 1924 after the stabilization of the mark, and gives close attention, often in long articles, to purely theoretical and analytical questions. Shorter articles are published in a supplement. This periodical covers the whole profession of business rather than a limited portion of the field.

ANNALEN DER  
BETRIEBSWIRTSCHAFT

Publisher—Prof. Dr. Calmes; Editor—Prof. Dr. Heber (quarterly from Weiss, Leipzig).

This is a periodical which desires to foster international relations. It publishes therefore not only German articles but also French and English. Judging from its contents, one finds that it covers the whole profession in its articles. It also places stress upon keeping in touch with professional literature.

BANKWISSENSCHAFT

Publisher—Prof. Dr. Kalveram; Editor—Prof. Dr. Mellerowicz (fortnightly from Pusch, Berlin).

This is the only scientific periodical of business which approaches in type the often highly specialized American magazine. Even here the field is less limited, being confined to a definite economic division rather than a particular line of business. This periodical, which was originally intended for bank employees and was considered very juridical, is now a source of more general banking and financial information. In the treatment of this field questions of general economics are also considered.

BETRIEBSWIRTSCHAFTLICHE BLÄTTER

Publishers—Prof. Dr. Oberparleiter and Prof. Ziegler (monthly from Hochschule für Welthandel, Vienna).

This periodical is published by the Austrian business economists and appeared in January, 1930, for the first time. It is similar to German periodicals.

DAS BETRIEBSWIRTSCHAFTLICHE  
SCHRIFTTUM

Published by a Committee for Economic Management of the Imperial Economic Board, Berlin; Editor—Dr. Kurt Schmaltz, Halle (monthly from Poeschel, Stuttgart, and Gloeckner, Leipzig).

This periodical is a bibliography of periodical literature, containing synopses of important articles on business economics which have appeared in German and foreign magazines. From time to time bibliographies of special fields appear. Each volume contains a list of authors; a catchword index appears in the last issue of each year.

II. *Professional Journals*

The following periodicals deal more closely with auditing whereas those above follow in general in the field of business administration.

ARCHIV FÜR DAS REVISIONS- UND  
TREUHANDWESEN

Publisher—Dr. Rudolf Fischer, Leipzig; Editor—Dr. W. Vosz, Leipzig (monthly from Gloeckner, Leipzig).

ZEITSCHRIFT FÜR DAS TREUHANDWESEN

Publisher—Verband Deutscher Treuhänder—und Revisionsgesellschaften e. V. Berlin; Editor—Dr. H. A. Ertel, Berlin (monthly from the publisher).

MITTEILUNGEN DES BUNDES DER  
BUCHSACHVERSTÄNDIGEN  
DEUTSCHLANDS

Publisher—Bund der Buchsachverständigen Deutschlands; Editor—Walter Meywald, Berlin (monthly from Dr. Schoedel, Syndikus, Berlin).

Auditing is not as developed in Germany as in the United States. The possible reform of corporation law and the possibility of the obligatory audit of corporation accounts as in England is, however, attracting much attention to this field.

The first of the above mentioned periodicals is published by the sworn auditors who are publicly appointed by the Chamber of Commerce; the second by the Society of

Auditors, and the last by the independent auditors who are not under oath. The "*Archiv für Revisions- und Treuhandwesen*" has developed into a valuable periodical, in spite of an excessive treatment of tax-questions. This is perhaps the one periodical in Germany most nearly like "*The Certified Public Accountant*" in considering special professional questions.

### III. The Periodicals of Practice

In the field of bookkeeping periodicals there appeared after 1924 a long list of periodicals many of which are no longer published. In this group may be mentioned:

#### BELEG UND BILANZ

Publisher—C. Fluhme, Berlin (three times a month from Muthsche, Stuttgart).

#### MAHN- UND BUCHHALTUNGSPRAXIS

Publishers—A. Heus and Dr. Fritz Piston (bi-monthly from Forkel, Stuttgart).

A last group of miscellaneous periodicals I am mentioning for the sake of completeness. They contain articles on bookkeeping organization and bookkeeping technique, especially in connection with machine bookkeeping. I am mentioning only those which may be considered to have established themselves.

#### ZEITSCHRIFT FÜR ORGANISATION

Publisher—Gesellschaft für Organisation e. V.; Editor—Dr. Fritz Wlach, Berlin (bi-monthly from Spaeth and Linde, Berlin).

At the present time this is the best periodical in the field of organization technique. It contains a good review of the rationalization movement.

#### WIRTSCHAFTLICHKEIT

Publisher—Julius Jaeckle (bi-monthly from Forkel, Stuttgart).

This magazine must in a certain sense be regarded as an encyclopedia, because the individual copies may be taken apart and then be reassembled according to a definite system. Clever, well-illustrated make-up.

#### TECHNIK UND WIRTSCHAFT

Publisher—Verein deutscher Ingenieure, Berlin; Editor—Dr. Freitag, Berlin (monthly from V.D.I., Verlag, Berlin).

This is a periodical which generally adopts the point of view of the engineer concerning questions in economics. Some of the general questions pertaining to economics which are discussed are no longer considered in the study of business economics.

#### VERKAUFSPRAXIS

Publisher—Victor Vogt (monthly from Forkel, Stuttgart).

#### MASCHINENBAU

Publisher—Verein deutscher Ingenieure und Verein deutscher Maschinenbauanstalten; Editor of technical articles—Prof. Meyenberg and Engineer Hans Häneke; Editor of Economic Articles—Dr. Rüstow (bi-monthly from V.D.I., Verlag, Berlin).

It discusses both technical and economic questions; is important not only for machine-building.

#### ZAHLUNGSVERKEHR UND BANKBETRIEB

Publisher—Otto Schoele, Berlin; Editor—M. Schönwandt, Berlin (monthly from Gurgens, Berlin).

A periodical which can be considered authoritative on the subjects of business technique and the rationalization of banking and exchange.

#### PLUTUSBRIEFE

Publisher—George Bernhard and Bruno Buchwald; Editor—Dr. Hermann Richter (monthly from Plutus, Berlin).

Well edited and shows a clear handling of special problems in each number for the practical education of bank employees.

#### BETRIEBSFÜHRUNG

Publisher—The German Trade Institute; Editor—Walter Bucerius, Karlsruhe (monthly from Braun, Karlsruhe).

The leading periodical for technical and economic rationalization of handicraft and small shops.



# THE IMPORTANCE OF REPLACEMENT VALUE

FRITZ SCHMIDT

THE PURPOSE of this paper is to show that replacement costs furnish the best basis for producing serviceable financial statements to use for current managerial purposes, or for use in planning mergers and reorganizations where the status of an enterprise as a whole is under consideration. However, it is first necessary to have a clear conception of profits, upon which the subject of values is based, before attempting the discussion.

The concept of profit sought is one which will enable the enterprise to function properly as an economic unit in all economic situations. It must be that profit which at the moment of its calculation can actually be distributed—that profit which gives a value-picture in the profit and loss statement corresponding to the current economic situation. In short, the profit conception sought must be in complete harmony with the fundamental principles of economics.

We cannot therefore accept blindly as correct whatever is customary in practice. Nor may we deviate for any consideration of technical procedure from the effort to gain a clear insight into the indicated theoretical question. Everything indicates that if we are successful in finding the correct concept of profit, a practical method for its ascertainment will be discovered. Even if the completely correct calculation of a theoretically defined profit were not possible, we would still have gained a great deal by knowing what was correct; because then we need only strive for better technical methods of approximation, for approximations are always customary in the application of all theoretical knowledge.

The profit of an undertaking can only consist of what is produced above the maintenance of business assets. A sharp line is drawn by this definition between assets and profits. A further question arises as to how an increase over the initial assets can be produced. It can result only from the

activity of the enterprise, and that activity is called *Umsatz* (sale or exchange). Only through a sale or an exchange transaction can the assets of an enterprise be increased. Sales, however, may consist of the conversion of goods into money and money into goods again, or the exchange of money for goods and goods for money again. In the first instance we have exchanges (sales) as in commerce and industry, in the other, as in speculation. This distinction receives further treatment later.

It is important to a definition of profit to have a definite capital-concept, or property-concept. The capital or assets of an enterprise can be:

1. The stock of real property including money and money due, or
2. The *value* of all real property expressed in abstract money units.

We call the first the real capital of the enterprise, the second the abstract capital. The definition of the profit of an enterprise depends upon which concept of capital we choose as our starting point. In the case of the real capital of an enterprise, profit is only produced when between the beginning and end of a fiscal period an increase of the concrete property has taken place. In the case of the abstract capital of an enterprise one can speak of profit when an increase has taken place in the value of the abstract money units, even if the assets have remained entirely unaltered in concrete form.

Turning then to the sources of profit, *changes in form* are first to receive consideration. The economic object of industry consists in transforming commodities, machinery, and labor, which are for the time being relatively cheap, into products which, because they are scarce, will be valued relatively high. The difference between the value of the cost-goods and the value of the final products represents the value increase. The entrepreneur is chiefly concerned in searching for differences in



values and in diminishing them (by supplying the want) yet only so far as will permit him to gain at least a normal profit from his activities. For example, if he determines that certain kinds of labor necessary for his purpose are relatively cheap because of their abundance, and if he also knows the process of producing with these cost elements such new products as are highly valued by the consumer, then it becomes profitable for him to use his capital and his labor for this kind of production. The entrepreneur thus has the most lively interest in constantly following up the formation of the value differences between the market price of his cost-goods and his sales-goods. If this difference increases he will increase production; if it declines or lessens, he must decrease production.

Of course, every industrial product requires time. There must be a lapse of time between the incoming of cost items and the outgoing of the finished goods, which sometimes can be very long. Therefore, if one wishes to seize the opportunity of a condition of value differences in order to make a profitable turnover, the necessary calculation must take place at the moment the resolution is made. One must therefore compare the cost value and the sale value as of the same day and estimate how far this value could be changed between the beginning of production and the day of sale.

Just as industry serves society by changing the material form of goods, so commerce serves by the exchange of finished products. Of course, the finished products of one enterprise or market may be the raw materials for another. In any case commerce does not change the goods concerned in the transaction. Because of this the reproach is often made that a merely commercial transaction is not productive, that its activity is a disadvantage for the ultimate consumer. If we examine the circumstances under which the transaction comes about, however, the error in reasoning becomes apparent. Goods are distributed quite unevenly in different national and international areas. There are, therefore,

markets in the productive regions which are saturated with proffered goods far beyond the needs of the consumers or other buyers in this region. As a result the price in these districts remains relatively low. On the other hand, we find economic regions in which, for diverse reasons, the proffered goods are considerably less than the demand. Consequently the prices remain high. The value difference between such markets is the cause of commerce. The merchant takes up as much from a full market as he can later unload with advantage on an empty one. If so large a quantity of goods were taken from the full market that a deficiency would be created thereby also causing the sales market to become glutted, then the prices in the production market would rise above those of the sales market. Were that to occur, however, the transaction would result in a loss instead of a profit and the over-ambitious merchants would suffer losses until the proper relations between the two markets was again restored.

In commerce, as in industry, the factor of time plays a part along with the factor of place, for transportation from a distance often lies between buying and selling. Therefore if a merchant wishes to remain permanently in business he must constantly watch the effect of all commercial costs upon his price-margins and increase the extent of his business when they rise and decrease it when they decline.

Profits are also found in differences in time-values (*Zeitwerte*). While the entrepreneur can measure the degree of his success in buying and selling if the sale of his goods brings him returns which would permit him to buy or produce an additional quantity of the same goods at the moment of selling, the purpose of the speculator is differently orientated. The latter wishes to make money produce money by investing it in such goods as will show an increase in value during the investment.

An important question from the standpoint of the balance sheet concerns the formation of the profit thus gained by specu-

lation. Out of the many questions which might be raised here only one can be given consideration; it is in connection with speculation on borrowed capital as against owned capital.

If a speculator takes out a loan for which he has to pay interest in order to buy goods which he hopes will rise in value, his profit consists in the price increase which is over and above the interest agreed upon. In the case of the deliberate investment in money of the proceeds of the goods sold, the speculator gains as profit both the interest on the existing cash asset and the eventual increase in the value of the money. In both cases, after the completion of the transaction and after the distribution of the profit, the speculator has the cash amount available with which he began the speculation. He can pay his debt and the principle of business capital preservation is thus taken care of. Only the realized speculation profit can be disbursed. In the case of buying goods with borrowed money, one can only disburse (as profit) the value increase realized from the goods above money-debt and interest after the transaction has been completed in which the speculatively acquired goods are sold. Before this the speculative profit is still bound up in the business. In practice speculating is frequently done with borrowed money in a sequence of interrelated transactions. One buys goods on credit, sells them and buys other goods. Then the part of the speculative profit due to the increase in value of the goods is tied up until the final repayment of the speculation debt which follows the last sale. Only selling profits (i.e., those produced by the difference between the prices of the buying and selling markets) can be disbursed in the meantime. From this it can be deduced that commercial accounting should be based on the value current in the purchase market, not only for goods acquired by owned capital but also for those bought with borrowed capital, if one wishes to determine the total realized profit.

It is especially significant to note that

two kinds of speculation are possible depending on whether one speculates with personal capital or borrowed capital. If one uses borrowed capital for the purchase of goods, the borrower of this outgoing capital is as a rule nominally bound to repay to the lender the same amount plus the interest agreed upon. As a result the creditor must bear all the changes in purchasing power. The possibilities of speculation are, thus, much greater than they would be if all money loans were made on an index-basis. In times of a general rise in the value of goods and shares, it is possible for speculators to gain because money lenders lose in purchasing power. But even in times of general increase in purchasing power (that is, as goods decline in value) speculation has in short selling a method whereby it can again profit from the change in the relation of goods to money.

The situation is essentially different if the speculation is accomplished with personal capital. It would be self-deception if the speculator regarded the appearance of a *general* increase of value or *general* decrease of value in money or goods as gain or loss. It stands to reason that the owner of the speculation money will have preserved his assets only if he gets on the average what he had before; both in purchasing power and in principal. A man using his own capital can talk about profit only when the value increase of goods purchased with personal capital covers the interest obtainable in a free market and also the diminished purchasing power of the money capital expended. In all speculations with personal capital one will have to consider the change in the purchasing power of money, which is on the whole nothing more than the reflection of the general price changes of goods. The measuring-rod for this change is the general index number, which, it is self-evident, will also be used when the purchasing power of money has risen. Suppose, for example, that \$10,000 is the invested capital and during the period up to the completion of the speculation the purchasing power of money has doubled so

that \$5,000 has, in consequence, the same purchasing power as the original amount. Then everything must be regarded as speculation profit from the sale of the speculation goods that is over and above the interest, the cost, and \$5,000.

Let us illustrate in practical examples the profit calculation of speculation enterprises, first starting with the speculation on borrowed capital. Let the invested capital be \$10,000, and interest at 10 per cent for one year, the duration of the speculation. Expenses will be neglected. Let the general index number move once from 100 to 200 and again from 100 to 50. The goods or shares purchased for the speculation should in the one case rise from 100 to 180, and in the other case decline from 100 to 80.

#### I. SPECULATION WITH BORROWED CAPITAL

##### Profit Calculation No. 1.

Investment .....	\$	10,000
Interest .....		1,000
Speculation profit .....		7,000
	\$	18,000

##### Profit Calculation No. 2.

Investment .....	\$	10,000
Interest .....		1,000
	\$	11,000
Proceeds of Sale .....	\$	18,000
	\$	18,000
Proceeds of Sale .....	\$	8,000
Speculation Loss .....		3,000
	\$	11,000

#### II. SPECULATION WITH PERSONAL CAPITAL

##### Profit Calculation No. 1.

Investment .....	\$	10,000
Interest .....		1,000
Increase in value of initial capital from 100 to 200 to be in a value correction account .....		10,000
	\$	21,000
Proceeds of Sale .....	\$	18,000
Loss .....		3,000
	\$	21,000

There is a kind of profit also which rarely occurs in the life of an enterprise, but nevertheless which gains significance as insight into business increases. This is the profit upon the sale of an enterprise as a whole. The installation of new tax laws relating to the seizure of profit at the sale of the whole enterprises makes the matter an issue. If one makes his calculations, as do the tax laws, with the purchase price serving as the cost value for figuring the profit involved in the sale of whole enterprises, then an exaggerated picture of profit can result. If the price level between the purchase and the sale of an enterprise has risen perceptibly, a higher profit is shown which is a mere paper profit. The danger lies in the fact that with the mounting size of the apparent profit, the tax levy on the "profit" also rises. The proper practice will no doubt work itself out in the years to come and there will probably be a considerable increase in the inclination of the perplexed practitioner to use current values in accounting. This will be the case especially if enterprises to be sold as a whole have large secret reserves. Then all these secret reserves suddenly come again to life as apparent profits, in so far as the buyer of the whole enterprise includes them in the price, which is what will occur for an enterprise with normal earnings.

On the contrary, in a time of declining price levels, the selling price will certainly be lower than the relatively high book values. One then calculates a loss although actually an entirely genuine profit can be gained above the current reproduction value. However, since the general tendency of the price level is to rise rather than decline, the outlook is especially good that the paper profit will be regarded as real and will have to be taxed. *If one wishes to keep the theory of profits free from one-sidedness, he will have to make use of the current value principle.* Profit can only be something over and above the current production value of all individual parts.

Following the above discussion of the fundamental principles of value and price, attention will be directed to the various types of balance sheet valuation in an attempt to indicate which type shall be held the most serviceable.

The cost price (*Anschaffungswert*) of a piece of property is the price which is paid for it at the time of acquisition. It is usually that price at which an economic good enters the accounts. As such it has the definite advantage of being comparatively easy to understand. Traditional accounting has taken it without reflection as the principal basis of balance sheet valuation. In the face of its many deficiencies one will have to remember that its dominant place in the balance sheet was not the result of the highest grade of reflective consideration but was rather due to more or less thoughtless imitation. The cost price of a piece of property is only one price in the supply market. At the moment of purchase it expresses a real value that is taken out of the price level of that day. But even on the next day the market situation may be markedly shifted and the cost price then has merely an historical significance. Even if one takes the view that cost price only indicates the amount of money which left the business on the day of purchase, one will not be able to use it as a measuring-rod for judging what profit there is in the proceeds after the sale is completed, for the value of the money on the day of purchase may not be equal to the value of money on the day of sale.

The replacement or reproduction cost (*Wiederbeschaffungswert*, *Tagesbeschaffungswert*) of an economic good is the market price for which one can obtain the economic good in question on the day of real or assumed replacement. Actual purchase or replacement is unessential; it is only essential that purchases could be made at the specific price at the time of evaluation. It is also unessential whether or not replacement or reproduction is under consideration. Both can be imaginary. The only important thing is the valuation of the

property at the price then current in the market. This price in definite instances has also the significance of a possible disposal price because it tells us the price at which a piece of property can be resold to the buying market (as raw material). Of course, many costs after they have entered the business and been converted into the product cannot again be isolated for the purpose of sale. This is especially true of labor and changed materials.

A balance sheet which is based upon replacement costs tells the owner what value his individual items of property have in the market on the date of the balance sheet. The total, if there are no omissions, is the sum which on this day would have to be expended in order to construct the enterprise anew. But in addition it should be noted that a considerable portion of the recorded properties, including immaterial values such as patents, advertising, and goodwill, are not entirely new at that moment, but should be considered only after a deduction for depreciation has been made which is consistent with the past use given them. Such a reproduction-value balance sheet has the greatest significance for understanding the economic condition of the enterprise concerned, because the total value therein is the only figure on which the earning capacity of the enterprise can be based. In this connection the original cost fails completely, because it is only in the rarest cases, even after considering depreciation, that later on it is still an accurate figure. The reproduction value in the statement shows *what is*, original cost shows *what was*.

Replacement costs as of the balance sheet date are taken into consideration in connection with the property which on that day is still in existence. But the sales activities of an enterprise show that a large amount of other goods passes through the business during an accounting period. For these sales transactions, which belong only to the profit and loss calculation, a replacement value is also to be considered. But here the reference day will have to be the



day of the sale or the day of replacement. The day of sale (*Umsatztag*) is the day on which a completed, marketable economic good becomes money, the day upon which the buyer and the seller agree upon a price. This replacement cost as of the day of sale tells the owner the price at which he could repurchase similar goods at that moment. If the selling price is lower, he will not care to bring goods to the selling market which could also be sold in the supply market. Where this "backwards sale" is not possible, the selling price which is less than the current replacement cost plus interest for the duration of the sales turnover, indicates that another sale of the same kind should not be attempted. In order to continue producing, the business must set aside out of income the amount by which the proceeds are in excess of the replacement price on the day of sale. Accordingly, the profit on the completed sale is whatever excess there may be of current selling value over present day cost. The original cost of purchases signifies nothing for the determination of profit upon sale, and for the sustaining of business assets, because with a turnover period of some length it is very improbable that one can again buy at original prices the items which are included in the product. From this it follows that replacement costs as of the day of sale must be the fundamental values for profit and loss calculations. Only this can show the manager of the business whether or not his production or trading is profitable at a given time, whether or not a business enlargement is necessary, due to good profits, or whether, in consequence of a decrease in the selling margin, a curtailment is necessary.

We have still to investigate whether the current replacement price on the day of replacement (*Beschaffungswert des Ersatztages*) will furnish a safe accounting figure. It will not do so, because the moment of rebuying (i.e., the time when the items disposed of will actually have to be replaced) is, at the moment of selling, in the future where values can now be only esti-

mated approximately. Furthermore, it is left entirely to the judgment of the owner whether he will consider it best actually to repurchase or not. He might consider it advisable to allow the proceeds to lie dormant in the form of money for a time. But even if the replacement price on the day one really buys anew could be correctly ascertained today, he still does not dare to take it as a basis of accounting, because on this day the goods in question are no longer the property of the seller; he has received an amount of money for them and now must reckon with it. At most, a premium for currency depreciation would have to be applied for a short time until it was possible to exchange the money again for goods, whether of the same kind or another sort.

In the ordinary selling price of goods there is included a profit. It is one of the oldest rules of financial statements to allow profit to appear only after it has been realized. This profit is not realized for any of the goods which are still held in the business. How large it will be cannot be determined in advance. If one wishes to have the still unrealized profit appear in the balance sheet, he will meet the difficulty that such a future profit is not disburseable without it having been previously realized through the selling of the goods in question. This would hardly be possible for the plant investment of the business. Therefore all unrealized changes in the value of assets must be accounted for not on profit and loss but on appreciation accounts.

Selling price has its principal significance in the profit and loss calculation. All of the goods sold are recorded at the sales prices currently resulting from the book-keeping. This is essentially the current price on the day of sale in the selling market. Here the selling price is indispensable because it must be set opposite the costs in order to figure out the business earnings from the difference between the two.

Finally there is the important question of the value of an enterprise as a whole. Here very different methods will be found



serviceable, for the question is one of a choice between a summation of the values of the separate parts of the enterprise and a valuation of the earnings.

The balance sheet of practice is in most cases built up of the cost values of its different parts. These values are often distorted by secret reserves and cannot give a serviceable valuation to the enterprise. What was once paid for an asset, perhaps years ago, has very little significance.

Therefore, the greatest significance attaches to the reproduction value of the enterprise, that is to say, to the summation of the current reproduction values of the separate parts including immaterial items. This total indicates the amount of capital which would be necessary at the date of the statement to build up the enterprise in its present form. In this way we arrive at the reproduction value (*Tagesherstellungswert*) of the whole enterprise and the amount of capital which, on that date, is embodied in it. Of course this sum does not need to correspond to the value of the enterprise as a whole, because if it is possible to gain a return through operations which is higher than the normal rate of interest on the reproduction value, the owner will not sell his business unless reimbursed for the excess. In spite of that, however, the reproduction value of the enterprise retains its important significance, for only by predicating this value can the earnings be evaluated. In order to know what earnings will result, it is necessary to know the valuation of the expenses flowing out during operations, that is to say, the reproduction or replacement prices of the expenditures.

A special kind of calculation of the value of an enterprise is found in the liquidation balance sheet. This statement becomes of practical significance when the business has shown that it is unprofitable and that it cannot be made profitable even by improvement and change. Then the liquidator has the task of selling the several assets as favorably as possible. The liquidation balance sheet, therefore, contains selling prices

of an unusual market. Normal selling markets are concerned only with the finished products, and often are not even open for liquidation-goods if there is no selling organization to push them. A liquidation sale in the normal market, however, is rarely possible, for generally the equipment, machines, and buildings are especially suited to the needs of a particular enterprise, and it is not easy to find someone who has exactly similar needs. In addition, most of the equipment has depreciated through use and wear so that the liquidator must seek a second-hand market for much of the property. If to that is added an economic pressure which makes a quick sale imperative, then as a rule only a fraction of the current reproduction value of the enterprise is realized at the sale of the assets in liquidation.

The valuation of the earning power of the whole enterprise is fundamentally quite different from valuation for the purpose of the balance sheet. The net income of a fiscal year is to be capitalized at the normal rate of interest as of the statement date, after having provided out of income a sufficient premium (surplus) against risks. Mostly the very close approach of income valuation to reproduction value prevents any surplus (*Mehrertragswert*) of income valuation. Often the surplus of capitalized normal interest is not a part of the business capital because it is dependent upon the personal service of the owner and is therefore a "management-value." Only the surplus income value which results from legal rights and monopolies transferable by sale are a part of the business capital and suitable for the balance sheet. The management value which is based upon personal service is not salable because the seller in leaving the firm takes it away with his person and because a good business man can reproduce this "management-value" for himself so that he will not pay more for a business as a whole than reproduction value of all assets plus earning value of rights and monopolies. Furthermore, one is under the necessity of con-

sidering the risk of future losses by choosing a rate of interest (for the capitalization calculation) higher than the normal rate. This can be recognized if one observes the market value of all of the shares of an enterprise. The income which flows to the shareholder as gross profit is as a rule essentially higher for industrial shares than for first-class, safe, interest bearing, securities. The difference corresponds approximately to the above mentioned risk premium.

In ascertaining the earning power valuation of an enterprise, one will certainly not proceed exclusively upon the basis of the figures of the present and near past; rather must he consider the development of the business in the future. The capitalization rate of interest will certainly have to be exclusively of the present, because in the event of a subsequent sale of the whole enterprise, the entire selling price must be paid in the present, or at least agreed upon. Perhaps, however, the enterprise can bring in higher or lower earnings in the future. The buyer may be of the opinion that he will produce better earnings with new working methods, but he does not for this reason have to let the seller get the whole surplus income value, which, after the sale, is entirely dependent upon him, the buyer. If

in the meantime an especially high income has been produced, the danger must be considered that competing concerns will lower the income through the installation of similar working methods. Therefore, one will have to distinguish between an income valuation of an enterprise as of the date of the balance sheet and an income valuation based upon a consideration of the development of future earning power.

In spite of the great significance which the calculation of an income valuation of the enterprise as a whole has for the understanding of its economic condition, we very seldom find such calculations in practice. As a rule they are reserved for reorganizations, amalgamations, and the like, and then are often based upon false income figures, the errors of which one seeks to lessen by using not the income of one year but of several consecutive years in the hope of producing an equalization. Technically there should be no difficulty in the accounting treatment of a surplus of the capitalized income over the reproduction value. But the fluctuations must not under any consideration appear as profit or loss.<sup>1</sup>

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<sup>1</sup> A more detailed statement of the author's views on the points here touched upon may be found in his book, *Organische Tageswertbilanz*, (Gloeckner, Leipzig).

# THE RELATION OF TAXATION TO THE HISTORY OF THE BALANCE SHEET

B. PENNDORF

PROBLEMS OF TAXATION have played an important part in Germany since the end of the Great War, as the burden of taxation has become very heavy, and the opinion that we are facing an entirely new condition of affairs is often heard. In this, too, Ben A-Kiba was right when he said that the connection between bookkeeping and taxation is extremely old, older even than one is inclined to believe.

## IN ANCIENT ROME

Beigel's well-known work on the accountancy of the Romans (Karlsruhe 1904) opens with the sentence "For the Roman State and Private Accountancy, the 'Census' was the starting point and the centre." The census, as it was called, was an assessment every five years on the Roman citizen the amount of which was determined by the property he owned. The particular census which was introduced by the Emperor Augustus at the time of the birth of Christ was of great importance, for it was intended to obtain a firm financial basis for expenses; consequently, it laid the foundation of a budget and the proportional distribution of taxes among those who were liable to pay.

Besides that of his landed property, the tax payer had to state the value of all his moveables and the extent of his outstanding debts. The result was the keeping of house-books in which the various kinds of property were entered. The taxpayer had then to declare upon oath that he had made no false entries. Citizens shared political authority according to the amount of property declared and the Romans, therefore, kept not only exact accounts of their daily receipts and expenditures, but also exact statements of all their property.

The first entries were made upon wooden boards coated with wax, which were put

together in the shape of a book, originally being called "*caudex*" (*codex*) and, after the introduction of parchment, "*charta*." At the time of the emperors, books were already made of "*membrana*" or parchment, whereas wax-boards remained in use as documents for some time longer.

A certain uniformity in bookkeeping undoubtedly resulted from this census which, in the interest of administration, must have required that ledgers be kept uniformly and in a summarized form. The "*Codex accepti et expensi*" was the result.

The accountancy of the "Argentarius" (bankers) comprised the following business books:

The *Adversaria* (Memorandum or Journal).

The *Codex Accepti et Expensi* (Cash-book).

The *Codex Rationum* (Personal Ledger).

The *Adversaria* corresponded to our modern memorandum or journal and contained entries of various business transactions in chronological order. It is possible that cash transactions were entered at once in the cashbook, thus the journal would have contained only the credit transactions and the conclusion of purchases, sales, and accounts.

The entries were formless, as the actual booking was made in the ledger, but before the transactions were transferred from the journal into the ledger, a summarizing seems to have taken place. It cannot be said, however, during which period this was done. In his speeches in favor of the actor, Roscius, Cicero blames the opponent Fannius for not having transferred to the "*Codex*" (ledger) the name of Roscius entered in the journals, but for having left it in the journals for three years, though his other outstanding debts as well as those of a later date, had been entered into the

ledger in the right place. From this it may be concluded that items were booked in chronological order.

Besides journals, the Roman banker, just as the ordinary *pater familias*, kept, for cash transactions, a cashbook called "*codex accepti et expensi*," cash receipts being entered into the "*tabula accepti*" and cash expenditures into the "*tabula expensi*," and in this way the cash balance could be ascertained at any time.

The banker's most important book was the "*codex rationum*," which he had to keep for private persons having current accounts with him. Individual "*rationes mensae*" (current accounts) were opened in the name of each client. The opening item was founded either upon a preliminary credit allowed by the banker to his client, or upon a loan or deposit which the banker received from the client, and for the investment of which a current account was kept. The banker made up his final balance sheet from the "*codex rationum*," and accounts were settled by balancing as in the present day. The statement of account, "*mensa scriptura*," had to be handed to the client, who acknowledged it by superscription if found to be correct. This was made possible by corresponding bookings of all business transactions being made by both parties.

#### IN MEDIEVAL ITALY

The relation between balance sheet and taxation can best be explained by an examination of the business books and tax returns of the great Florentine banking house of the Medici, about which Sieveking<sup>1</sup> made excellent investigatory studies.

Let us first examine the accountancy of the Medici. Each business book commenced with an "*Invocazione*," an invocation to the Saints, similar to the opening of books by "*mit Gott*" or "*Laus Deo*," which, until recently, was commonly used.

<sup>1</sup> Sieveking records only the contents; the specimen for the formula I quote from Cecchevelli, *I libri di mercatura della Banca Medici, Firenze, 1913*.

In the books of the Medici, the Almighty, the Virgin Mary, the Apostles, and all the Saints of the Heavenly Empire were implored to save from error, and to grant favor, good luck, and health of soul and body.

Let us imagine that we have before us the ledger of the Milan branch in the year 1459, in which should be entered all debtors and creditors. It is called the great Red Book No. E, and contains all types of transactions and accounts for many firms. Below this is the trade mark (*segno*) of the Medici, in the shape of a cross. Various mercantile books of the Medici have been preserved, the oldest being the ledger of the firm of Averardo de Medici e Company in the year 1395. Unfortunately, the ledger is not complete for only pages 17 to 111 have been preserved, these being a little smaller than those of our usual business books and measuring 43 cm. by 30 cm. One account, or several separated by horizontal lines, are shown on each page. If the accounts have been closed or if the balance has been carried forward to a new page or into a new book, the entry is crossed out by a vertical line. The accounts are headed by "*dee*" or "*devono dare*" (shall give) and "*dee*" or "*devono avere*" (shall have). The larger part of the 1395 ledger is used for banking transactions, since the Averardo Company constantly transacted a clearing business with the most important banking houses. Therefore, we find money transactions, bills of exchange and discounts, besides transactions in goods, loans, and insurances. An account opened for a banking house in Pisa may be quoted as an example. It is kept in two currencies, the Pisa *fiorini* (fl.) being entered in Roman figures, and the Florentine currency in Arabic figures. The heading, "*per noi*" (*nostro*), is also written above items to be converted from the currency received into Florentine currency. The entry on the debit side refers to the insurance of Tortosa Wool (*lana da Tortosa*, Ebro Estuary) as far as the harbor of Pisa on August 14, 1395. The

insurance value amounts to 100 fl., the premium to fl. III s. X in Pisa currency, and to fl. 3.14.6 in Florentine currency (i.e.,  $3\frac{1}{2}$  per cent). The item was transferred to the Insurance account, Fol. 49.

Left page:

## MCCCLXXXXV

per noi Lorenzo di Cione e Gentilo di Baldasare e Comp. di Pisa deono dare a di XIII d'agosto f. tre s. X a oro da Lapo di Messer Lapo f.C. che assicurarono per noi in su la nave di Stefano Brogliolo in sulla quale era lana segnata h. da Tortosa a porto pisana posto a ragion di sichurtà a. c. 49 in Firenze f. III F. 3.14.6 F. III S.X.

On page 49 we read:

Sichurtà Averardo de Medici e Comp. per ragion di sichurtà deono dare.

On the debit side we also find items referring to remittances:

rimesso loro per noi . . . ne posero a nostro conto oder tenuto conto i loro di Genova.

The page concludes with:

Somma in Pisa fl. CCI x. IIII d. IIII d'oro.

Somma in Firenze fl. CCVI. s. XXVII d. V aff (= Florentiner fl.).

The first entry on the right-hand page reads:

## MCCCLXXXXV

per noi Lorenzo di Cione e Gentilo di Baldasare e Comp. che dimorano a Pisa (wohnhaft in) deono avere a di XVIII d'agosto f. sesantaquatro s. VIII d. X a oro leviamo da c. 43 in Firenze F. 64.4.9. F. LX IIII S. XIII d. IIII.

The first Pisa addition is found at the end of the page:

f.CCI s. IIII d. IIII, then Florence CLXXXXVIII s. XV d I.

From this results:

206.27.5
less 198.15.1
<hr/>
8.12.4

Consequently we have as the last item for balancing on the credit side:

"Disavanzasi (loss) per questa ragione (for this account) fl. VIII s. XII d. IIII aff. posto a disavanzzi a.c. 27 (transferred to the loss account Fol. 27)."

A further subdivision of the profit and loss account is represented by the expenses account. This includes money disbursed for the purchase of office books, rent, and petty expenses, the latter being collected beforehand and entered not in single items but periodically.

The account runs as follows:

Left side:

## MCCCXXXXV

Spese di Bancho deono dare a di XXX di marzo a Giovanni di Nicolo cartolaio posto ch'ebbe il detto per libri per lo Bancho F. V S. XXVII D X a di XVIII d'aprile f. . . . per la pigione del Bancho . . . F. XXX V di XXVIII di maggio f. III s. VII d. II per più spese minute fatte da di XXVI di marzo infino a di 26 di questo come affare per una scritta infilzata . . . F. III S. VII D II di XXII di giugno s. XVI a Giovanni di Nicolo cartolaio per un libro sconto F.—X VI—.

The profits on the credit side originate from the banking business.

Right side:

## MCCCXXXXV

Spese di Bancho deono avere a di XXVII d'aprile f. cinque da' Medici di Roma per scambio di denari cambiati per loro posto a lor conto a. c. 35 F. V a di 10 di maggio s. XVIII da Paolo di Hamato di Perugia per scambio a lor conto a. c. 21 F.—S. X VIII D. VII.

From the above mentioned facts we learn that at the end of the fourteenth century one general profit and loss account did not suffice, but that special accounts were opened for particularly important kinds of expenses, as, for example, the insurance premiums in this case.

The real profit and loss account was debited on the debit side with losses (disavanzzi) which had resulted, for instance, from the assay of the standard of coins (27 fl. having the value of only 20 fl.).

At the end, yet another entry concerning the investment of capital would be



made. The house of Medici had also invested capital with interest in consolidated State loans (*prestanzoni*) and opened an account for it in the ledger. The loans are entered on the credit side at a rate of 41 per cent.

"Averardo di Francesco de Medici (son of Francesco) per prestanzoni dee avere . . . . che frutto . . . . per XLI it centinaio."

The loss of fl. 79, s. 22 is transferred to the loss account S. 90.

"Disavanzi per questa ragione fl. settantaneove s. XII posto a disavanzi in questo a.c. 90."

The amount of fl. 664.4.4 is entered on the debit side, from whence it is transferred to the already mentioned Red Book No. E or e (*libro rosso segnato e*) on page 118, where the balance account probably was. Apart from that, a sum of fl. 1,422 which had been bought by the firm, is shown in the "*libro del monte*" kept by the State. This item has not been placed in the value column, thus being a so-called notice item.

Another ledger, dating from the year 1460, bears the name of the firm of Giovanni e Pierfrancesco de Medici e Comp. and belongs, therefore, to the Medici bank in Florence. It has a great resemblance to the Averardo book of 1395. The greater part of it is occupied by current account transactions with friendly banking houses, chiefly the branches of the Medici in Rome, Venice, and Geneva.

Foreign correspondents' accounts kept in Florence were entered in *florini* (fl.), whereas transactions effected by the correspondents for the Florentine Bank were entered in foreign currencies, these being converted into Florentine currency.

In 1494 the conversion of all items into a common currency has already been pointed out by Pacioli as one of the chief requirements of good accountancy.

Many noble clients such as bishops, cardinals, dukes, and margraves were registered in the banking book.

The accounts "*spese di banco*," "*chambi e provisioni*," and "*avanzi di*

*bancho*" were also of importance in the banking business. It may be seen from the latter that fl. 2,747.9.1 could be posted in the yellow secret account book as profit.

The account "*merchantantie attenti a noi e altri*" (concerning ourselves and others) referred to business in general merchandise. Finally we find receipts referring to payments of interest from the national debt (*monte*) and disbursements of the firm.

The "*libro grande rosso*" is another ledger kept by Piero and Giovanni de Medici in Milan in 1459, and we have already quoted its lengthy opening formula. It is important to notice that current accounts for bankers are kept in this book, for instance, that of the banker Tieco "*Giovanni Tieco Banchiere conto corrente dee dare . . . . dee avere*."

For some firms several accounts have been opened, e.g., "*Pier Francesco de Medici e Comp. di Venezia per loro conto corrente*" and "*per nostro conto corrente*." Besides the "*conto corrente*" there are still "*parte de tempi*"; so a "*conto a parte de tempi*" is opened for the banker Tieco in which credits granted for longer periods are entered. Thus, these accounts closely correspond to the modern checking account and the accounts "*dei tempi*" to the modern current account.

The balancing usually took place at the Geneva Fair.

Further on in the ledger we find a letter of credit issued by the Medici to Cardinal di Rossi and particulars of a security they gave for a weaver of Pavia. The business in merchandise especially concerns dealings in wool and silk, in this case it being English wool which was sold by woolen weavers (*lanari*) or hatmakers.

From the private account (*spese di casa per nostro vivere*) we learn, among other things, the expenses incurred in furnishing a palace. The sum of £21.15.0 was spent for a walnut money chest intended as a repository for bankers' books and secret documents. This account was closed in the secret book (*libro segreto*).

On the credit side we read:

"Spese di casa qui di contro deono avere 1200 s. 10 d. 1 posto che avanzi debbino dare a c. 47 del libro segreto, per tante che ragioniamo per questo anno spese per nostro vivere di casa (which can be reckoned as private expenses for the year).

In the "*libro segreto paonazzo*" (violet secret book) the balance of the "*libro grande rosso*" of 1459 has been worked out to imp. £304,451.19.9d.—creditors, and to £589,298.13.18d.—debtors, and had been sent to the central office in Florence.

Besides the ledgers, many subsidiary business books of the Medici have been preserved, namely warehouse, cash, and invoice books.

Among some business books of the end of the fifteenth century, we find a journal which exactly corresponds to the requirements of double entry bookkeeping. It dates from the year 1491-92 and has a vertical line on the left-hand side, then follows a space for the text, and then two value columns. The entry commences with the formula:

"Farò debitore il tal conto (I shall make a debtor this and that account) e creditore il tale altro."

It refers to some expenses incurred on a bale of serge brought to the country for the Medici. These are debited to the Medici (p. 62) and credited to the goods expenses account (p. 100). Below the entry we find the positive references, 62-100, which today would be placed on the left-hand side, before the line, in the so-called reference column.

"Farò debitore Piero de Medici e Comp di Firenze e creditore spese di mercanzia di s. V che sono per più spese fatte a una balla di sargia mandata per loro alla villa.

a lib. 62

100 L.—s.5."

An advantage of the Florentine book-keeping over that of the other Italian towns is the booking of property, the inventory. In 1440 at the death of Lorenzo,

Cosimo's brother, an inventory of common movables was made:

"Dictus cosma post mortem dicti laurentii fecit universale inventarium et descriptionem omnium bonorum mobilium communium." At Lorenzo's death the said Cosimus made a general inventory and description of all movable common goods.)

At the same time an inventory of common landed property was made. The business capital, however, was not noted until the end of the Florentine year on March 28, 1441. In 1440 the total capital amounted to 235,187 *scudi*. At the distribution in the year 1451 the arbitrators could refer to the balances of the year 1440:

"Salda facta tam super libris secretis societatum ipsorum Cosme et Laurentii quam et super eorum libro secreto proprio."

Between the years 1440 and 1460 the business profits, as well as the inheritance from the Averardo family, had added extensively to the fortune of the Medici. Only a comparatively small amount was used to increase the business capital, the greater part being used for the display of splendor and brilliancy. According to Lorenzo Medici's report, 663,755 fl. were spent for alms, taxes, and buildings between 1431 and 1471. In spite of these expenses, Piero, Cosimo's son, left at his death somewhat more than Cosimo and Lorenzo together had possessed in 1440, namely 237,988 *scudi*.

These account books were also the basis for taxation. At that time the burden of taxation was very heavy; sometimes several  $\frac{1}{2}$  per cent property taxes and several 1 per cent compulsory loans were levied in the course of one year. According to the law of 1427, landed property, live stock, money, and business capital had to be assessed. The value of estates was estimated by the capitalization of the produce of the soil at the rate of 7 per cent. In addition to the debts, however, the value of the dwelling houses, household furniture, riding horses or mules for personal use, and 200 fl. for each member of

the family could be deducted. Tax payers with many children, therefore, would often make a minus return, and in this case a lump sum was fixed.

In 1427 Averardo de Medici stated his property as follows:

Landed property	.....	7618 fl.	16 s.	1 d
State loan ( <i>monte</i> )	.....	5733 fl.	12 s.	3 d
Business capital	.....	4081 fl.	2 s.	2 d

From this amount he was allowed to deduct:

Household expenses	.....	1400 fl.
Gifts	.....	937 fl. 2337

so that taxes had to be paid on the sum of 15,096 fl. 20 s. 6 d.

As the amount of State loan (*monte*) was known to the exact figure, and the value of landed property could also be exactly ascertained, endeavors to pay the lowest possible amount in taxes could be made only with reference to the business capital. According to Averardo's tax return in 1427, the banking business had suffered a loss and the mercantile business had realized no profit. Even at that time, the tax officials looked upon things differently from the tax payer. The officials wrote their remarks on the margin of the tax return and frequently increased the amounts. In 1430 Cosimo and Lorenzo paid taxes on a capital of fl. 87,447.11.11 which sum was composed of:

Landed property	.....	39199.19.7
Monte (State loans)	.....	29040.17.7
Business capital	.....	44752.14.2

	112993.11.4
—	25545.1.95
	87447.11.11

For creditors, gifts and the household, fl. 25,545 could be deducted. They paid taxes at the rate of  $\frac{1}{2}$  per cent, namely fl. 437.16.9. In 1458 Cosimo and Pierfrancesco had a fortune of fl. 115,170, of which fl. 575 were disbursed in taxes. In the detailed tax return, the landed property was first stated on thirty-two pages according to the schedule of:

Stock in 1427

plus increase up to 1457

minus decrease up to 1457 (by loss or gifts)

At the valuation, the purchase price was taken as a basis, and from this a value of fl. 58,937.7s.2d. resulted. From this sum fl. 2,985 were deducted for living expenses and fl. 1,714 for losses and the use of 120 yoke of oxen.

The business capital comprised monies from the bank, the wool and silk business in Florence, and the branches in Venice, Rome, Bruges, London, Geneva, and Milan. Next came the possession of State loans. From these sums could be deducted expenses for the household, etc., namely fl. 34,000, whereby the amount liable to taxation was considerably reduced.

The basis for taxation was formed not on the income or proceeds, but on the amount of property and the "*soorabbon-dante sostanza*" or superfluous property. As it is now with us, the property tax balance was not a true balance sheet, but a statement of property which had its foundation in the books and ledgers of the firm.

In the course of years the merchants had learned so well how to evade taxation, that in 1458 self assessment was again replaced by apportionment. It was pointed out that the obligation of producing books and balances had induced many citizens to retire from business. The merchants had become accustomed to keeping two different sets of books—morals having already declined 500 years ago—so that taxes amounting to only fl. 1,500, would have represented a business capital of fl. 300,000. An official assessment, however, based on a business capital of fl. 600,000 would result in fl. 3,000 in taxes.

#### IN MEDIEVAL GERMANY

The earliest mention of taxes in German business books is to be found in the books of the Regensburg merchant family of Rüntinger in the years 1383-1407. In 1398 Matthäus Rüntinger opened an account for his native town, debiting it with

expenses arising from his many honorary posts and crediting it with his taxes falling due from time to time. Here, for the first time, we find in a business book Indian (Arabic) figures which were written in the manner of Roman figures, e.g., 15 000,30, instead of 15 030 guilders. In one case Rüntinger even used the Indian figures for a secret writing, probably intending to defraud the revenue authorities. After the death of his parents in the year 1390, he recorded the amount of his property in cryptography. The figures 1-5 stood for the vowels, 6 for *h*, 7 for *l*, 8 for *n*, and 9 for *r*; those signifying the value of figures had a dot placed over them.

The most extensive information about tax paying I have found in the diary of Lucas Rem for the years 1494-1541, edited by B. Greiff, Augsburg, 1861. Lucas Rem was originally employed in the service of the Welser, in whose business he had invested 2,000 fl. since 1502, and on this amount he had received interest at the rate of 81 per cent, 39 per cent, 15 per cent, 11 per cent, 16 per cent, and 30 per cent, so that in 1517 he had 9,440 fl. in their business. In 1518 he started business on his own account and founded a trading concern with his brothers Endris and Hans, and one Ulrich Hanold.

The diary of this travelled man records little of the adventurous life of its writer. The most important paragraphs deal with statements of his capital and with balances, and information about his statements for the property tax, which he had recorded most carefully and from which it is proved that he was an honest tax payer.

It is assumed that, according to the municipal law of Augsburg, a tax return for a property tax had to be filed every six years and this was based upon a self assessment sworn before a commission. Severe punishment was inflicted for rendering false statements and for any omission. The members of the commission were bound to secrecy. This so-called sworn tax amounted to  $\frac{1}{4}$  per cent on movables and  $\frac{1}{2}$  per cent on real estate.

The following paragraph bears the heading:

*"Jus (= Jesus) in Augsburg"*

"In the following I record how and to what extent I reckon and estimate all sworn taxes, having been paid, and all carefully and exactly calculated without deceit."

The entries commence in the year 1516:

"1516 was the year of a sworn tax. I had then deposited all my fortune with Anton Welser & Company. It amounted to fl. 7500 in gold. On this amount I had paid taxes for three years 1516, 1517 and 1518, fl. 37 $\frac{1}{2}$  ( $\frac{1}{2}\%$ ) each year. And my wife, on whose account Marx Echain had paid, took fl. 19. This amount and mine, fl. 56 $\frac{1}{2}$  in all, I paid in the other three years 1519, 1520 and 1521, which does not need much reckoning.

"In 1522 we had another sworn tax. Then, at the end of the 21st year, I made up a general balance which my brothers and Ulrich Hanold (= 30th Oct., 1521 with 24% profit). Had all debts been settled, I should have had to have paid fl. 13500, the tax on which would have been fl. 67 $\frac{1}{2}$ , to be correct. But at that time we shared with Jacob Fugger several bills which had fallen due to his Imperial Majesty three years ago. The amount which represented our company's share was fl. 18310, of which sum I had a personal share of approximately fl. 5500. This should be paid in Spain. As we had no evidence, we had received no payments for 2 $\frac{1}{2}$  years and the sum was in much danger. I should have liked to have given up my share for half its value or less. But in order not to give too much, I deducted my share in the said Imperial bills from the sworn tax (fl. 1900) = fl. 9 $\frac{1}{2}$ . This leaves a balance of 58 gold fl. This amount of 58 fl., therefore, has been paid in taxes by me for six years.

"In 1528 there was yet another sworn tax. Then, on the occasion of the retirement of my worthy partner, Ulrich Hanold on the 31st August, 1528, I made a balance sheet with my brother Endris, in which was stated the amount due to me, namely fl. 17500.

Now follows a detailed statement of many dubious outstanding debts, for which he deducts only a part.

"But in order to do justice to my oath that I paid more than enough and that for all eternity there shall be no slander or reproof,

I have deducted not more than fl. 1500 for all risks. And I have deducted so little as I only paid taxes for the first time on the 20th August, 1532. I have to pay taxes on a balance of fl. 1600. Of this amount I owe—

Frau Barbara von Dinheim . . . . .	fl. 600
Her husband . . . . .	fl. 500
Lucas Hans Rem . . . . .	fl. 300

---

fl. 1400

Remainder on which I have to pay taxes . . . . . fl. 14600

I have paid taxes on this amount from 1528 to 1539, each year separately, which deducts from my fortune . . . . . fl. 78

Further, I pay taxes on my four estates—one-tenth; garden valued at fl. 2000 at the rate of  $\frac{1}{4}\%$ , amounting to . . . . . fl. 5

Total taxes paid during these six years

$\frac{1}{2}\%$  on my fortune  
 $\frac{1}{4}\%$  on my real estate

---

Amounts in gold per annum to . . fl. 78

There was another sworn tax in 1539:

"Total amount due to me if all were paid [outstanding debts] . . . . . fl. 33008

Tax on this =  $\frac{1}{2}\%$ , in gold . . . . . fl. 165

For risk and hazard I deduct fl. 3600

Further, I owe Barbara von Dinheim, her husband and Lucas Rem of Ulm . . . . . fl. 2400

Therefore, I deduct these two items at the rate of  $\frac{1}{2}\%$  . . . . . fl. 30

The remainder I pay as taxes on my fortune duly and truly, without deceit, and stated to the best of my knowledge and belief

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fl. 135

Further, I have paid taxes on my four estates—one-tenth; garden, etc., altogether valued at fl. 2000 at the rate of  $\frac{1}{4}\%$  amounting to . . fl. 5

---

Total which I should have and have paid as taxes during these 6 years 1534-1539 on fortune and real estate, each year, separately, amounts in gold to . . . . . fl. 140"

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In this diary Lucas Rem has also left us notes on the value and development of his property, which permit of a comparison being made with his tax payments.

The possession of his real estate remained unaltered the whole time, whereas the capital underwent considerable changes. Between 1516 and 1539 the fortune advanced from fl. 7,500 to about fl. 50 000, consequently increasing by 566 per cent, but the taxes paid by Rem during the same period only advanced from 37 $\frac{1}{2}$  to 135 fl., consequently increasing by only 260 per cent. While the official rate of taxation during those twenty-four years was always 0.5 per cent unalterably, Rem paid on an average only 0.37 per cent, and was not called upon to pay fully. The differences are explained by deductions on the returns. Thus, in 1522 he deducts fl. 91 $\frac{1}{2}$  from taxes, i.e., he pays 1,900 fl. too little in consideration of his engagement in a Spanish loan, the profit on which was not then fixed. It must also be mentioned that the taxes remained constant for too long a period, and the value of property liable to taxation altered, for returns were made at the beginning of the six years' taxation period and applied until the end of that time.

Finally, a few words about the Fuggers. It cannot be said how the taxation returns filed by them originated. The taxes for the year 1493 amounted to 170 fl. for Ulrich, 140 fl. for Georg, and 120 fl. for Jacob. A detailed inventory with a balance sheet and profit calculation up to the 31st December, 1527, has been preserved and from this a certain connection with taxes is perceptible. Neither the worthless (*böse*) debts nor the dubious claims (*so nit gar gewiss*) are recorded in the balance sheet of 1527, though both kinds of debts have been exactly inventoried in a special "black" book. The value of all movables (chiefly the household furniture of the various factories) has also been noted in detail, but has been omitted from the balance sheet. The reason for this is that the balance sheet had also to serve as a basis for the property return. As we



have seen above from Lucas Rem, a property tax return had to be handed in during 1528. According to ancient custom, it was not necessary to mention household furniture in the sworn self-assessment as this was free from taxation and, as we can trace in Lucas Rem's book, dubious debts were not considered for this return.

On account of their "widely extensive business" and their "capital and fortune spreading over almost half the world" the Fuggers applied in 1535 for exemption from the usual sworn statement of property which other citizens had to make every six years. Instead, they offered to pay a fixed annual sum in perpetuity. The municipal authorities accepted this offer and it was

agreed that each of the three brothers should pay 800 gold florins per annum; therefore, the Fuggers' total amount of taxes was fixed at fl. 2,400. In case, however, of the partners in the firm giving up their citizenship or emigrating, they would have had to pay the sum of fl. 9,000. Taking the rates in force at that time as a basis (i.e.,  $\frac{1}{4}$  per cent on real estate and  $\frac{1}{2}$  per cent on capital), this sum would correspond to a rateable fortune of from fl. 480,000 to fl. 960,000 at the most, whereas the actual fortune of the Fuggers, as we find from the balance sheets, was considerably higher, the "*rechte Kapital*" being stated as fl. 1,602,319 in the balance sheet of 1527.

## EDITORIALS

### EARNED SURPLUS

The American Institute's six-year-old committee on the definition of earned surplus presented its final report this month before the Institute's convention in Denver. The full report of the Committee will be published, it is hoped, in the near future. In the meantime, the revealing of a few of the arguments which led the Committee to its final conclusions may be of interest.

Accounting is following the evolution of other sciences. Whether it will ever become an exact science we of today cannot tell. Statisticians fondly hope that it will. Practitioners to a man say it cannot, pointing out that the rules governing specific instances are dependent on practical judgments—which is another way of saying that the laws of the science, if any, are unknown. Nevertheless, generalizations, even by practitioners, are increasing at a rapid rate, and the seeming necessity of defining as precisely as possible an important term is a single illustration of the tendency.

In searching for words with which the definition might be framed, the Committee had no precedents to follow. For example, Hatfield<sup>1</sup> says that surplus in general is the excess of net assets over capital stock; he then proceeds with illustrations of the varying uses of the term. But since surplus and earned surplus are purely balance-sheet concepts, the use in the definition of only balance-sheet terms (in which the other half of the surplus credits and debits are reflected) would appear to be a use of correlates and would, therefore, defeat the purpose of definition. Paton<sup>2</sup> comes closer when he says that the "essential function of the surplus division is to register the undistributed balance of the net revenue accounts." Other textbook writers might be cited; but it was found that none had been sufficiently precise to quote.

<sup>1</sup> Accounting, pp. 296-7.

<sup>2</sup> Accounting Theory, p. 181.

The definition, as finally revised, follows:

"Earned surplus is the balance of the net profits, net income, and gains of a corporation after deducting losses and after deducting distributions to stockholders and transfers to capital-stock accounts."

"Net profit" is, of course, the final periodic profit figure carried to the earned surplus account of an industrial; "net income" the same for a holding company, trust, or other organization where the principal sources of profit are interest and dividends; "gains" are profits which some accountants have misnamed "extraneous" and persist in crediting direct to surplus or other net worth account on the supposition that profits arising from other than ordinary operations are of a special character.

Further on in the Committee's report net profits, net income, and gains are described as including

"profits from the disposition of any corporate asset (other than the corporation's own capital stock), and [net profits, net income, and gains] arise from transactions resulting in the acquisition of cash or of property which at the time of its receipt may ordinarily be classified as, or converted into, a current asset; or from transactions in which the consideration received includes the complete or partial discharge of a liability."

It will be observed that the above quotations differ from the corresponding sections of the Committee's report of a year ago which was reproduced in the June issue of the REVIEW. Changed also is the concept of paid-in surplus which now is defined as including donated surplus. One member of our association objected to the classification or revaluation surplus under capital surplus; however, the Committee, after carefully reviewing the various opinions that have been voiced on the subject, reached the conclusion that revaluation surplus, if expressed at all (and it is be-

lieved that most accountants today prefer that it be omitted from financial statements except, perhaps, parenthetically), should be regarded as a permanent part of the capital structure—and equivalent to any paid-in value. This conclusion is forced home when it is remembered that the simple act of recapitalization, or the declaration of a stock dividend out of revaluation surplus, can transform revaluation surplus into capital stock. However, the Committee realized how widespread has been the custom of reducing current expense by so-called realized appreciation and added the following sentence to what had been said on the subject last year:

"If a corporation has not in any way legally or morally obligated itself to maintain the assets at their increased valuation out of earnings, depreciation on the excess of appraisal over book values may, by reason of past practice, be charged directly against revaluation surplus, provided a disclosure is made."

The hope is thus indirectly expressed that any newly-created revaluation surplus will be treated as indicated in last year's report.

Disclosures and qualifications and their repetition on successive balance sheets are subjects concerning which much remains unsaid. They are likely to be the subjects of rules of conduct which the future holds in store for the profession. In the meantime they must be discussed fully and frankly if definitions and uniform practices are to be adopted by the profession; and their wording must be significant and must, furthermore, become a definite addition to the parlance of the financial world.

Whether the definition in its new form should stand, the profession, including instructors in accounting, must decide. The project of venturing into the field of the

lexicographer and avoiding the snares of legal precedents has been tentative and at times without hope of any result; but if the attempt has succeeded in encouraging others to enter the lists and in beginning the effort to transform the present empirical stage of accounting into the beginnings of a new inductive science, the effort will have been well expended.

One accountant, a man in public practice, made a number of excellent recommendations to the Committee on the Definition of Earned Surplus. But his letter included the following passages:

"As something of a purist I beg to submit herewith three sections. . . . You will note a number of changes in verbiage. . . ."

Why do accountants habitually misuse the word *verbiage*? This accountant meant *phraseology* according to the evidence in his suggestions. It is probable that the majority of persons who have been observed misusing the word mean *diction*.

An aberration on the part of every accountant whom we have heard using the term is the mispronunciation of *amortize* and *amortization*. Lest none be inspired to open their dictionaries, be it said that the accent of the first word and the secondary accent of the second word are on the second syllable. There is no alternative. We have always forgiven accountants who say "nyther" and "eyther" (we know one who says "neether" and "eyther") because we have presumed they wished to appear eastern or western or exotic, and because a number of the dictionaries admit these pronunciations, though not as preferred; but we shall never forgive anyone who, having perused these lines, persists in saying AMortize.

**Current Ratio 1½ to 1**





belong to the owners. Neither one has a definite maturity save in the case of the Depreciation Reserve which may call for an expenditure of working Capital upon the date of replacement of the fixed assets, for which the reserve was set aside. The creation of dividend liabilities lies entirely in the hands of the directors. The credit man should also check the fact as to whether or not the increase in the working capital was caused by the sale of some fixed asset. Undoubtedly the balance sheet would reflect a stronger credit position if unliquid assets had been turned into cash, than if the improvement had come through the sale of bonds.

A serious mistake would be made if it was assumed that in the case below the firm was in the same relative position because the current ratio remained unchanged between periods.

I	
Fixed Assets ..\$500,000	Capital Liabilities .....\$500,000
Current Assets. 300,000	Current Liabilities ..... 200,000
	Surplus ..... 100,000
<u>\$800,000</u>	<u>\$800,000</u>

Current Ratio  $1\frac{1}{2}$  to 1

II	
Fixed Assets ..\$500,000	Capital Liabilities .....\$550,000
Current Assets. 450,000	Current Liabilities ..... 300,000
<u>          </u>	Surplus ..... 100,000
\$950,000	
<u>          </u>	
	<u>\$950,000</u>

Current Ratio  $1\frac{1}{2}$  to 1

In both instances above the current ratio has remained at the figure of  $1\frac{1}{2}$  to 1. The causes were (1) the increase in the working capital, counterbalanced by a greater trading on the long term investment in current assets. However, the sum total debts has increased \$150,000. The same ratio position would have been noted if the working capital had been improved through the reinvestment of \$50,000 from

the Depreciation Reserve, from Profits or a combination of the two. The concern would have been in a better financial position in the latter instance where the source was from inside funds that involved no credit obligations.

Again, the ratio may be lowered if working capital is depleted, let us say, for expanding fixed assets; at the same time it might be raised through the paying down of current debts. One trend offsets the other. The net effect of the financial policy might result in the holding of the current ratio in a status quo. However, here as in the other case, the financial structure might be seriously weakened by the process, yet the current ratio would not reflect the situation.

Conclusions: The changes in the ratio, caused by increases or decreases in the working capital are fundamental. They are apt to be permanent, therefore, should be analyzed carefully, in order to ascertain if the financial structure has been altered seriously by the change, as for example the flotation of bonds to fund the current debts. Furthermore the permanency of the changed working capital position should be gone into, in order to learn of the possible maturity of any debts, which may tend to reduce the amount of working capital in the near future. The investment of Reserves or of money secured from the sale of Fixed Assets, would give a more permanent increase in a working capital, hence a stronger current ratio position, than if the money were secured from long term securities, or was subject to recurring dividend payments.

The secondary causes of change in the liquidity ratio, brought about by pyramiding and entrenching on credit operations, should be shown as separate factors in financial causation. Increased current assets secured on short term liabilities, reduce the current ratio. Increases in the same assets, secured from the sale of stocks and bonds, or the investment of surplus and reserves cause the opposite tendency.

HOMER E. GREGORY

## AN APTITUDE TEST FOR ACCOUNTING

If a test could be devised which would accurately predict accounting ability a great deal of wasted effort could be saved. Such a test would serve many purposes:

1. It would be an aid in the administration of university courses in accounting. The courses in accounting might be organized to provide material for students depending on their inherent aptitude for the work. The basic course in accounting usually has a very large enrollment and it is necessary to set standards of work and select text material adapted to the large group of average ability. Yet there is a considerable number who are qualified to do more difficult work, and also a group who should be discouraged from attempting the work at all.

2. If an accurate and reliable measure of accounting aptitude were available, instructors in accounting would be able to deal much more intelligently and effectively with their students. It would be possible to detect the loafer and often times to determine and to deal with exterior causes of poor work.

3. An accurate test would make possible the statistical measurement of the efficiency of instruction as between different instructors teaching the same course.

4. It would permit high school officials, vocational advisors, etc. to intelligently advise students to undertake or not to undertake the study of accounting. Many students believe that they have a deep interest in accounting when in reality their main interest is in the rewards which they think accounting holds for them. Such a test would enable advisors to discourage those prospective accounting students who by nature are not fitted to become accountants.

During the past three years an attempt has been made to devise such a test at the University of Oregon. The first requisite was the preparation of an objective test for the measurement of accounting ability. The final examination given at the end of

the first term served as the criterion or yardstick against which the experimental tests were measured. This criterion was revised a number of times, and in its present form contains seventy-five questions which require more than two hours for completion. Obviously it is essential that this test be accurate if its results are to be significant. The coefficient of reliability of the criterion in its final form is  $r = +.79$ .<sup>1</sup> This indicates consistency in measuring the criterion.

The first step in the construction of the aptitude test itself consisted in setting up a number of tests related to accounting. The greatest difficulty was in the construction of these experimental tests. They could not contain accounting material because the test was designed to be given to students who had not taken courses in accounting. There was no method of determining whether a particular ability or skill was related to ability in accounting except by setting up a test and trying it out. In addition, where a considerable number of tests are given there is a great deal of overlapping in the results. Two tests may correlate very highly with accounting ability as indicated by scores on the criterion and yet both tests may be measuring essentially the same quality or skill. In order to determine the *independent influence* of each one of the experimental tests the multitude and partial correlation technique was used. The experimental tests were given in batteries and then multiple and partial correlation used to determine the independent influences of each in predicting scores on the criterion. The following experimental tests were constructed.

1. Test of rote memory.

<sup>1</sup> Reliability refers to the consistency of a test in measuring one variable. Any test must have a high reliability to be a good measure. The coefficient of reliability was found by correlating the scores for the odd numbered items of each paper with those for the even numbered items and stepping the result up with the Spearman Brown formula.

2. Test of ability to solve problems in arithmetic.
3. Test of discrimination in classifying accounting material.
4. Test of ability to read understandingly a non-technical problem in accounting.
5. Test of ability to reason in abstract terms.
6. Test of reading ability on non-technical accounting text material.
7. Test of business vocabulary and business experience.
8. Test of ability to reason in terms of arithmetic.
9. Test of ability to make accurate tabulations.

These tests were not all given at the same time. Many of them have been revised and given several times, but during the past three years the efficiency of each of the above types of tests in predicting scores on the criterion have been measured.

It is essential that these tests correlate with accounting ability. It is also essential that these tests provide a better indication of accounting ability than does a general intelligence examination if the tests are to be justified.

In the September 1929 issue of the *ACCOUNTING REVIEW* a tentative report upon the progress of this experiment was made. At that time it appeared that, although an aptitude test could be built up which seemed to correlate with inherent accounting ability a general intelligence test gave almost as high a correlation. In other words, success in accounting seemed to be a matter of *general* intelligence and a general ability test seemed to be almost as accurate an instrument of prediction as a specially prepared test.

At present, however, it appears, after further experimentation, that it is possible to build up tests which will be a considerably better instrument of prediction than a general intelligence test. The coefficient of correlation (multiple) of the aptitude test, as finally completed, with accounting ac-

complishment is  $R = +.64$ . The coefficient of correlation between the general ability score and accounting accomplishment was  $r = +.51$ .<sup>2</sup>

It thus appears that the aptitude test which is described below is a materially better instrument of prediction than the general intelligence test. The aptitude test as finally constructed consisted of a battery of three tests. A brief description of these tests follows:

#### SECTION A. A TEST OF DISCRIMINATION IN CLASSIFICATION

The directions on this section were as follows:

The expenditures of railroads may be classified into the following groups:

1. Expenses of maintenance, of way, and of structures.
2. Expenses of maintenance, of equipment (engines and rolling stock).
3. Expenses of obtaining traffic.
4. Expenses involved in conducting transportation.
5. Cost of road and structures.
6. Cost of equipment.

Classify the expenditures listed below using the number of the group.

Illustration: Money paid to a section hand engaged in cutting weeds along the right of way \_\_\_\_\_ 1

(Sample items follow:)

1. Money paid to defray the expenses of the railroad company's "exhibit" at a state fair \_\_\_\_\_
2. Money paid for repairing fences along the right of way..... \_\_\_\_\_
3. Money paid as salary to storekeeper in machine shop..... \_\_\_\_\_
4. Money paid for the installation of an "automatic block system" \_\_\_\_\_
5. Money paid to civil engineers and surveyors engaged in building a spur track from the main line of the railroad to a factory \_\_\_\_\_

<sup>2</sup>The general ability test employed was The American Council on Education Psychological Examination for High School Graduates and College Freshmen, published by the American Council on Education.

There were twenty-five questions in this section. A number of the expenditures cited were so easy as to permit all students to answer them correctly, which tended to reduce the predictive value. These questions have been eliminated. By rearranging the remaining questions in the order of difficulty and by increasing the number of items to be classified the value of this section can be materially enhanced.

#### SECTION B. A TEST OF BUSINESS VOCABULARY AND OF BUSINESS EXPERIENCE

Throughout the experiment it was felt that a knowledge of business procedure and terminology, and an awareness of what was going on in the world of business was definitely related to probability of success in accounting. This proved to be true. It is likely that these factors of special interest had much to do with making the whole test of greater predictive value than the general ability test. The directions on this section were as follows: Draw a line under the word that makes the sentence true. Sample items follow:

1. A Prominent American corporation is  
United Motors Co. General Motors Co.  
American Motors Co. International Motors Co.
2. A "check" is an  
order Promise Acknowledgment Refusal
3. The National City Bank of New York is owned by  
New York City The Federal Government  
Private Individuals New York State
4. The price of copper per pound is approximately  
Eighteen cents One Dollar Six Cents  
Eighty-Nine Cents
5. A "clearing house" has to do with  
Railroads Banks The Government Auction Sales
6. A prominent American business man was  
Horace Mann John Wanamaker Henry Clay Joseph G. Gannon
7. A "creditor" is one  
To whom money is owed Who owns stock in a company Who pays taxes Who is bankrupt

#### SECTION C. A TEST OF ABILITY TO SOLVE ARITHMETIC PROBLEMS

This test did not differ materially from the usual section devoted to arithmetic in general psychological tests. It began with an easy interpretation of a graph, continued through the elementary processes of addition, multiplication, and division to more difficult problems involving a considerable accuracy in analysis. Typical problems are:

1. How many times is  $\frac{2}{3}$  contained in  $\frac{9}{8}$ ?
2. A traveling salesman is offered two positions. One of the positions pay \$2,400 a year. The other pays \$1,000 per year plus a 10% commission on all sales. What would his average monthly sales have to be in order that the earnings in the second position equal the salary offered in the first?
3. If a dealer sells goods at a profit of 40% above cost but fails to collect 10% of the sales, what per cent profit on cost is he really making?
4. If a dealer sold daily 150 quarts of milk last month and 180 quarts of milk this month, what was the percentage of increase?

There is ample statistical evidence that these tests measure practically all of the aptitude factors that were measured by any of the other tests attempted. This is evident from the fact that the multiple correlation<sup>3</sup> between a battery of six tests including the three described was  $R = +.67$ . The multiple correlation of the three tests described, by themselves was  $R = +.64$ . Thus the three next best tests added but 3 points to the correlation coefficient. The coefficient of reliability for this aptitude battery is  $R = +.86$  which is sufficiently high even for individual diagnosis.

<sup>3</sup> The coefficient of multiple correlation is the correlation coefficient between the scores on the criterion (accounting accomplishment) and the scores on the battery of aptitude tests under the most favorable weighting of each test. The multiple and partial correlation technique is a process whereby this most favorable weighting is determined.

As a further test of their validity the tests for the entire group of students<sup>4</sup> were segregated into six grade groups according to their scores. Of these six divisions, groups 1, 3, and 5 were selected. This gave one group of students with high achievement scores, one group with average scores, and one group with a rather low order of ability. Each item on each section of the aptitude test was checked against this grouping. The number of errors on an item by students in group I was calculated. The number of errors made on the same item was also calculated for each of the other two groups. The tabulated errors were then examined to find whether or not each item tended to group the students in the same way that they were grouped by the tests as a whole. Every item that tended to group them at all grouped them as did the criterion. Some items were missed by no one.

The tests described seem to be valid for three reasons:

1. They provide a very consistent measure (reliability coefficient + .86).
2. It groups students as the criterion groups them.
3. It correlates well with the criterion ( $r = + .64$ ).

Further computations indicated that the tests predicted the ability of any given individual within .5 of a point (based upon the grouping of I, II, III, IV, V, and F) in 50 per cent of the cases and within .7 of

<sup>4</sup> There were 274 cases available.

<sup>5</sup> To demonstrate mathematically the accuracy of the tests, the following formula may be used:

$$\sigma \text{ est. c. a.} = \sigma c \sqrt{\gamma c_2 - R^2 c. a.}$$

$\gamma c_2$  represents the reliability of the criterion. Substituting numerical values these become

$$\sigma \text{ est. c. a.} = 30.8 \sqrt{.79 - .07^2} = 17.96 \text{ Score Points}$$

$$P. E. \text{ est. c. a.} = .0745 \times 17.96 = 12.05 \text{ Score Points}$$

Interpreted, the above means that the true achievement score will be predicted within 12.05 score points in half the cases or within 17.96 score points in 68% of the cases. The spacing in score points to place students in grade groups of I, II, III, IV, V, and F was 24.8 score points.

C=Criterion (accomplishment score)

A=Aptitude Score

a grade point in 68 per cent of the cases.<sup>5</sup> Since these figures mean the prediction of the student's exact position within the group, it can be readily seen that the validity of prediction is much higher if it is desired merely to place the student within given groups without regard to ranking within that group. If students were to be classified into only three groups, those of highest ability, those who compose the large average group, and those with distinctly low aptitudes, the measure becomes still more reliable.

Tests that measure accounting aptitude may be used to advantage in maintaining proper relationship with students and in administering a course with a large enrollment.

For example, the test was used as an aid in evaluating the quality of teaching done in the basic accounting course during the fall term, 1929. There were seven instructors who taught at least one section of accounting. Seven groups of twelve students were then found whose aptitude scores indicated that they were approximately equal. These groups had almost the same total aptitude and were almost exactly equal man for man. Each group was selected from the class of a single instructor. These groups were built up as follows: A student with an aptitude score of approximately 104 was selected for each group, similarly another "pair" with an aptitude of approximately 99 was selected, and so on, until there were twelve pairs selected with aptitude scores ranging from 104, which was a relatively high score, to 68 which was relatively low. In order to make the selection an absolutely impersonal one this pairing was done without access to the accomplishment (criterion) score.

The aptitude scores of the groups is shown below.

Pair	Instructor						
	A	B	C	D	E	F	G
1	104	104	104	105	105	108	104
2	99	99	99	97	100	99	99
3	97	95	95	95	92	92	95
4	90	89	90	93	92	90	91



Pair	A	B	C	D	E	F	G
5	86	89	89	88	88	89	88
6	86	88	89	88	87	87	88
7	85	85	85	84	84	85	85
8	88	84	84	84	83	85	85
9	81	81	80	88	80	84	81
10	81	80	80	78	79	78	79
11	72	78	72	73	74	71	74
12	68	66	68	72	69	69	68
	1034	1035	1035	1040	1033	1037	1035

The accomplishment score of each student was then determined and tabulated:

ACCOMPLISHMENT SCORES							
Instructor							
Pair	A	B	C	D	E	F	G
1	214	203	225	208	250	247	212
2	195	168	209	194	232	181	208
3	228	162	205	176	219	153	199
4	225	194	230	176	186	205	195
5	252	180	184	196	208	231	225
6	224	202	201	192	168	243	205
7	219	141	190	208	176	211	190
8	191	169	191	169	170	210	157
9	197	187	230	171	187	183	190
10	225	188	204	139	178	209	211
11	199	201	126	134	217	166	158
12	185	123	181	187	196	164	210
Totals	2554	2088	2376	2152	2387	2398	2360

The accomplishment scores of the students in each group were taken as the measure of the teacher's efficiency. This may be open to some criticism on the score that the groups are not necessarily equal in application, interest, and other elements which cannot be measured by an aptitude test. The answer is, of course, that these factors are the things which test the teacher's skill, and that factors which are not susceptible to the influence of the teacher are probably a minor consideration. Instructors ranked as follows:

A with a score of 2554)	I
F with a score of 2398)	
E with a score of 2387)	II
C with a score of 2376)	
G with a score of 2360)	
D with a score of 2152)	III
B with a score of 2088)	

The typical accomplishment of careful and efficient teaching is probably represen-

ted by the scores in Group II. It will be noted that the difference in the three groups is marked by a margin of approximately 200 points, so that there is no likelihood that a change of students selected for the pairs would result in a change in ranking. Approximately one-half of the students taking the aptitude test had scores of 87 or above. In selecting the pairs, care was taken to have one-half of them 87 or above and the one-half below 87. Subtotals were struck for each of these divisions to determine, if possible, the relative efficiency of the instructors in respect to their work with low grade students and their work with high grade students. The instructors in these measurements ranked in the following order:

With high grade students	With low grade students
A 1338	A 1216
E 1263	F 1183
F 1260	E 1124
C 1254	C 1122
G 1244	G 1116
D 1142	D 1008
B 1109	B 979

It was hoped that by thus segregating the pairs into two groups, it might be discovered which instructors were particularly efficient in teaching high grade students and which excelled in teaching low grade students. It is sometimes held that an instructor might give so much of his time and effort to low grade students that the advancement of good students is arrested. Apparently this is not the case. Instructors ranked practically the same in each group, indicating that an instructor who gets a high degree of accomplishment from his better students will also get a relatively high accomplishment from his low grade students.

It may be unwise to use an aptitude test of this type as a sole guide in individual diagnosis, yet where the aptitude score corroborates other evidence it may be used to head off many distressing situations. Often the mere act of showing a student that his

accomplishment is considerably lower than it should be according to his aptitude test acts as a most effective stimulus.

Any test that will predict a student's aptitude for any specific subject opens up many fields for speculation and experimentation. It is hoped that this predictive test when fully revised will serve that purpose.

O. K. BURRELL  
A. B. STILLMAN

#### FOREIGN ACCOUNTING TERMS

The following notes have been prepared under the the direction of A. C. Littleton.

For the present the studies will be confined to accounting terms from the German. The principal sources have been such works as: *Nichlish, Handwörterbuch der Betriebswirtschaft*; Stern, *Buchhaltungslexikon*; Bott, *Handwörterbuch des Kaufmans*.

**BUCHHALTUNG**—Man kann Buchhaltung definieren

**BOOKKEEPING**: One can bookkeeping define als die systematische Darstellung der as the systematic presentation of the

Vermögensbestandteile einer Wirtschaft detailed properties of an economic unit

und ihren in geldschätzbaren Veränderungen and their value changes.

**Doppelte Buchhaltung**—double entry bookkeeping

**Einfache Buchhaltung**—single entry bookkeeping

**Buchhaltungsformen**—bookkeeping forms

**Buchhaltungspflicht**—(legal) duty of keeping books

**Buchhaltungstheorie**—bookkeeping theory

**Buchhaltungsunterricht**—bookkeeping instruction

**Buchhaltungsbücher**—bookkeeping books

**RECHNUNG**—die Berechnung

**AN ACCOUNT** (cf. reckoning): the statement welche der Verkäufer dem Käufer sendet which the seller to the buyer sends über die zu liefernde Ware.

concerning the to be delivered goods.

**Rechnungsjahr**—accounting (fiscal) year

**Rechnungslegung**—a reporting of accounts

**Rechnungsaufstellung**—statement of account

**Rechnungsbeleg**—voucher

**Rechnungsbetrag**—amount of invoice

**Rechnungsgeld**—money of account

**Rechnungsmässig**—agreeing with the accounts

**Rechnungsprüfung**—an audit

**Rechnungswesen**—accountancy, accounting in general

auf Rechnung—on account

auf Rechnung stellen—put to account

in Rechnung setzen—bring to account

in Rechnung bringen—enter into an account

laut Rechnung—as per account rendered

Rechnung ablegen—to render an account

Rechnung abschliessen—to close or settle an account

Rechnung aufstellen—to make out an account or invoice

Rechnung ausgleichen—to balance an account

Rechnung führen—to keep an account

Vorrechnung—a prior accounting

Nachrechnung—a past accounting

**KONTO**—eine Rechnung die dargestellt ist

**ACCOUNT**: a statement which presented is auf zwei gegenüberliegenden oder auf

on two opposing (pages) or on

einer geteilten Blattseite, welche

one subdivided page, in which

links das Soll (d.i., die

on the left the debits (i.e., the

Verbindlichkeit dessen darstellt, für den obligations of him — for whom

diese Rechnung bestimmt ist) während this statement made is) while

rechts das Haben (d.i., das Guthaben

on the right the credits (i.e., the claims

desselben) zum Ausdrucke gebracht

of the same person) to expression brought erscheint.

are.

**Kontokorrent**—running or current account

**Kontokorrentbuch**—current accounts book

**Kontoauszug**—abstract of account

**Kontostand**—condition of account

**Kontoförmig**—in account form

**Kontenplan**—plan of accounts, system

**Kollektivkonten**—controlling accounts

**Kundenkonten**—customers' accounts

**Personenkonten**—personal accounts

Metakonten—joint accounts  
 Sachkonten—goods accounts  
**GEWINN**—eine Differenz zwischen Einnahmen  
**PROFIT**: a difference between income und Ausgaben, oder zwischen Erlös und and outgo or between proceeds and  
 Aufwand, oder zwischen Anfangs- und expense, or between beginning and  
 Endkapital.  
 ending capital.  
 Gewinnvortrag—profit carried forward, undivided profits  
 Gewinnbeteiligung—profit sharing  
 Gewinnermittlung—ascertainment of profits  
 Gewinnrückstellung—reservation of profits  
 Gewinnanteil—dividend  
 Gewinnbringend—profitable  
 Gewinnsteuer—profits tax  
 Gewinn und Verlust—profit and loss  
 Scheingewinn—ostensible or specious profit under fluctuating currency  
 Rohgewinn—gross profit  
 Reingewinn—net profit  
 Unternehmergeinn—entrepreneural profit  
**SOLL**—debit, debit side  
 Sollausgabe—estimated expenditure  
 Sollbestand—estimated balance  
 Solleinnahme—estimated revenue  
 Sollposten—debit item (posting)  
 Sollrechnung—estimated receipts and expenditure  
 Sollsald—debit balance  
**HABEN**—credit, credit side  
 Habensald—credit balance  
**GESCHAFT**—business, concern  
 Geschäftsanteil—share in the business  
 Geschäftsbericht—business report  
 Geschäftsbetrieb—management of a business  
 Geschäftsführer—manager  
 Geschäftsführung—management  
 Geschäftsgründung—foundation of a business  
 Geschäftsinhaber—owner, proprietor  
 Geschäftsjahr—fiscal year  
 Geschäftskapital—working capital  
 Geschäftsschwung—brisk trade  
 Geschäftstille—dull trade  
 Geschäftsverlust—trading loss

Geschäftsvermögen—business capital  
 Geschäftswert—goodwill  
**UNTERNEHMER**—entrepreneur, head of a business  
 Unternehmergeinn—earnings of management  
 Unternehmerlohn—wages of management  
 Unternehmerkapital—proprietor's capital  
**UNTERNEHMUNG**—a business concern, undertaking  
 Unternehmungskapital—all capital employed in a business  
 Unternehmungslustig—enterprising  
 Unternehmungsrisiko—business risk  
**FABRIK**—factory  
 Fabrikarbeiter—factory worker  
 Fabrikbetrieb—factory management  
 Fabrikbuchhaltung—factory bookkeeping  
 Fabrikdirector—works manager  
 Fabrikzeugnis—manufactured article  
 Fabrikgebäude—factory buildings  
 Fabrikkosten—shop cost  
 Fabrikmässig—machine-made  
 Fabrikpreis—manufacturer's price  
 Fabrikwesen—factory system  
 Fabrikant—manufacturer  
 Fabrikat—manufactured article  
 Fabrikation—production  
**WIRTSCHAFT**—economy, management  
 Wirtschaftlich—economic  
 Wirtschaftlichkeit—economical management  
 Wirtschaftsaufbau—structure of industry  
 Wirtschaftsbetrieb—administration  
 Betriebswirtschaft—business administration  
 Wirtschaftsführung—management  
 Wirtschaftsjahr—fiscal year  
 Wirtschaftslage—economic conditions  
 Wirtschaftslehre—science of economics  
 Wirtschaftsleistung—economic service  
 Wirtschaftsplan—budget  
 Wirtschaftsverkehr—commerce and trade  
 Wirtschaftsvoraussage—business forecast  
 Wirtschaftszahlen—industrial statistics  
**UMSATZE**—transactions, sales  
 Umsatz—turnover, volume of business  
 Umsatzgeschwindigkeit—velocity of turnover  
 Umsatzgrösse—volume of turnover  
 Umsatzkapital—working capital  
 Umsatzvermögen—circulating capital

A. C. LITTLETON

## BOOK REVIEWS

*Recent Economic Changes.* Report of the Committee on Recent Economic Changes, of the President's Conference on Unemployment. 2 Volumes. McGraw-Hill. 1929.

This substantial work is the third publication of the President's Conference on Unemployment of 1921. The two volumes consist of the brief report of the Committee on Recent Economic Changes of that Conference and the very elaborate investigation made, at the request of the Committee, under the auspices of the National Bureau of Economic Research, Incorporated. The various parts of the investigation by the National Bureau relate as a rule to the period 1922-28 and cover the following subjects, in addition to an Introduction by Edwin F. Gay and a Review by Wesley C. Mitchell:

Consumption and the Standard of Living Industry

- (a) Changes in new and old industries
- (b) Technical changes in manufacturing industries
- (c) The changing structure of industry

Construction

Transportation

- (a) Railways
- (b) Shipping

Marketing

Labor

Management

Agriculture

Price movements and related industrial changes

Money and credit and their effect on business

Foreign markets and foreign credits

The national income and its distribution

To each one of these subjects is devoted a lengthy chapter by a recognized authority. The investigation as a whole is by far the best available record of economic developments during recent years.

In its brief report, the Committee points out first of all that "acceleration rather than structural change is the key to an understanding of our recent economic developments." Even hand-to-mouth buying, installment selling, co-operative marketing, and chain stores are new only in the scale of their recent development. The intense activity which characterized the period 1923 to 1929 was nevertheless "spotty." Certain industries were busier than other industries and certain geographical areas more prosperous than other areas.

The great increase in the use of power, an important characteristic of the period, has contributed to the reduction in the unit cost of production, to the elimination of drudgery from much unskilled work, and to the maintenance or increase of wages. The continuing large supply of available credit facilitated the acceleration of forces and its resultant rising standard of living.

There was an increasing tendency toward price stability, both as between classes of commodities and in the price experience of individual commodities. This decreasing variability in prices at a time when the productivity per hour of labor was greatly increased, and the demand for goods was greatly stimulated, the Committee regarded as one of the most significant factors disclosed by the survey. The advancing tendency of wages, while the cost of living was stationary, contributed definitely to the degree of prosperity which prevailed. The people of the United States became consumers of what they produced to an extent never before realized. The application, on a broad scale, of the principle of high wages and low costs as a policy of enlightened industrial practice impressed the Committee as a fundamental development.

As evidence of the presence of prosperity, the people became steadily less concerned about the primary needs—food, clothing, and shelter—and an increasing number had a considerable margin of earnings available for saving or for spending in a variety of ways. Moreover, the amount of leisure and the volume of consumption of goods and services during leisure increased notably. The favorable condition of the country was due in no slight degree, the Committee recognized, to our natural advantages—the possession of abundant raw materials and sources of power, the great size of our domestic market, and the absence of trade barriers between the states.

Although the purpose of the investigation and report was to describe and interpret past developments, rather than to look ahead, the Committee concluded that the survey had proved conclusively the theoretical proposition that wants are almost insatiable; that one want satisfied makes way for another; and that economically we have a boundless field before us. "We have the power to produce and the capital to bring about exchange between the producing and consuming groups. We have communication to speed and spread the influence of ideas. We have swift and dependable transportation. We have an educational system which is steadily raising standards and improving tastes. We have the sciences and arts to help us. We have a great national opportunity." But, the Committee added "we cannot maintain our economic advantage, or hope fully to realize our economic future, unless we consciously accept the principle of equilibrium and apply it skillfully in every economic relation. . . . If natural resources, especially the land, are wastefully used; if money in quantity is taken out of production and employed for speculation; if any group develops a method of artificial price advancement which puts one commodity out of balance with other commodities; if either management or labor

disregards the common interest—to this extent equilibrium will be destroyed, and destroyed for all. . . . During the past few years equilibrium has been fairly well maintained. We have not wasted the hours of labor by strikes or lockouts. Until recently we have not diverted savings from productive business to speculation. There has been balance between the economic forces—not perfect balance, but a degree of balance which has enabled the intricate machine to produce and to serve our people.”

JOSEPH L. SNIDER

*Costs for Manufacturers*, by Charles Smith. Isaac Pitman & Sons, New York, 1928, viii—90 pp.

This little book will be of interest to American readers on other than practical grounds. The general English setting and flavor will afford some marked contrasts with American practice. Those who are acquainted with cost procedure in England will observe that although advances are being made parallel to those which have taken place in this country, yet English practice, at least as manifested in books, is still some distance behind.

The book is dominated by two main ideas, both very familiar to American readers. The first is that of standard costs, which pervades the work to a far greater degree than would be supposed from a bare reading of the table of contents. Associated with this, a good deal of attention is given to the variations in unit costs, which are occasioned by changes in the volume of output. The discussion is in keeping with the purpose avowed in the preface, of making cost accounting a more effective force in the management of business. The second feature which the author emphasizes is the recommendation to distribute burden on practically what is known here as a machine-hour rate basis. The author says that “the customary but unscientific percentage relationship between overhead charges and labour is entirely abandoned” in favor of his method under which “the cost and expenses are attached to each machine, group, bench, or work space.” The author has perhaps allowed himself to be carried away with the enthusiasm of a new idea. It is well recognized in this country that there are many conditions of production where the machine-hour rate or its equivalent, such as a furnace-hour rate in casting, is indeed by far the best practice; but there are many other conditions where a labor percentage, or labor hour charge are sound and accurate. One may venture the opinion that, after twenty years or so of educational work in this country as to the merits of the machine-hour rate, a large majority of business establishments are still using some form of labor basis for the allocation of burden. Some of these would perhaps do well to change to a machine-hour rate; but in many cases their practice represents good judgment, after due consideration of the merits for the machine-hour rate.

The exposition is in a number of places markedly elliptical, as is apt to be the case when a practical man writes on a subject with which he is very familiar. For this reason the book can scarcely be commended to students. Men who have had considerable experience, however, will find the information given a valuable supplement to their knowledge of cost accounting, and an aid in the management of business.

T. H. SANDERS

*Accountants' Index*, Second Supplement: A Bibliography of Accounting Literature July 1923–December 1927, New York, American Institute of Accountants, 1928. 789 pp.

The appearance of the second supplement, or third volume, of this monumental work will be greeted with satisfaction by all serious students of accounting. The work is an indispensable service to anyone who does much research or reference work in accounting. The exhaustive care with which the compilation has been made will at once become evident upon reference to it on any minor topic, or on the name of any writer, however obscure. In the case of depreciation the book is more than bibliographical; it is encyclopedic, and the voluminous citation of rates furnishes a study in itself.

This is the sort of work which probably could not be done on a commercial basis, and must, therefore, be left to the public-spirited enterprise of a professional body like the American Institute of Accountants, to whom is due the gratitude of all members and friends of the profession. Without wishing to make our gratitude too much in the nature of “a lively anticipation of favors to come” one cannot help hoping that the Institute may some day find it possible to treat other subjects in fashion somewhat similar to that given here to depreciation.

T. H. SANDERS

*C. P. A. Problems*, Jacob B. Taylor and Herman C. Miller. McGraw-Hill Book Company, Inc., New York, 1930. 603 pp.

This work is a collection of 243 accounting problems, 260 questions on accounting theory, and 204 questions on auditing theory and procedure selected from recent C. P. A. Examinations, and classified as to subject matter.

The authors of this book are to be commended for confining their selection of problems and questions to those which have been asked within the last few years, for only by a study of the latest examinations can a candidate properly prepare himself for the task required in the examination room. We have had altogether too many books containing, for the most part, the pre-war vintage of problems.

In examining this compilation of problems and questions the reviewer could not help but feel that



two important examination subjects, Federal Taxes and Actuarial Calculations, had not been treated adequately. In the preface to their book the authors make the statement regarding the subject of Federal Taxes "that to have developed this subject exhaustively would have carried the study far beyond the intended scope and physical limitations of the volume." While this statement is correct, yet the examining boards expect candidates to show a familiarity with the income tax regulations. The value of the book would have been greatly enhanced had the authors devoted a section of the work to a series of questions and problems illustrating the application of the various articles contained in the income tax regulations.

The advisability of including problems on Actuarial Science in the C. P. A. examinations has been questioned by some accountants, but nevertheless, questions on this subject are asked in the examinations given in many states. The authors would have done well to have given more attention to this subject.

The Appendix contains the complete Illinois and Ohio C. P. A. Examinations of May, 1929, which may be used by the student as a test of his ability to prepare satisfactory solutions in the required time.

It is understood that a book of solutions to the problems and questions in this volume will be published shortly.

On the whole, this book is worthy of the attention of all serious prospective examinees.

HENRY T. CHAMBERLIN

*Bank Sales Management*, by Mahlon D. Miller.  
The Ronald Press, New York, 1929. vii—311 pp.

This book is intended to teach how to increase a bank's profitable business. It should be helpful and suggestive for the officer in a small community bank and for the solicitor in the new business department of a large bank, especially where an aggressive campaign is feasible. The treatment is systematic, making a good reference book; there are good illustrations; the style is interesting, and usually clear. Great weight is laid, and properly so, on the personal relation between banker and client, as an element in winning and holding business. Many plans for developing new business are outlined or suggested which cannot fail to be helpful to the solicitor. "Savings deposits" is given eight times the space which "trusts" receives, which is badly out of proportion. The chapter on collections and exchange is the least effective part of the book, while the two chapters on the sale of securities contain considerable matter of doubtful value. As a whole, and viewed merely as a "how book" on getting business, the volume is worth while.

It is perhaps necessary to discuss matters of

bank management and bank policy in such a book as this; at any rate the author has done so and unfortunately has not improved a good book by so doing. Out of a larger list the following are illustrative of subjects on which many bank-men would make exception: On page 145 a plan for obtaining savings accounts requires the bank to appoint an employee at a factory as its agent to receive deposits there, said agent being outside the bank's fidelity bond. On page 242, it is proposed to sell securities on the partial payment plan and "if the customer later decides not to complete the full payment for the bonds, it is generally customary to return his money to him, with savings bank interest." On page 195, bank stockholders are to be asked to help obtain business and are to be told that an increase in deposits will mean an increase in the bank's capital, hence stock dividends, in accord with the bank's established policy. On page 239, as an aid to bond salesmen, it is proposed to ask help from real estate agents because "if friendly to the bank they are willing to co-operate in reciprocation for loans or other banking favors." To this reviewer, the first two involve improper banking risks; the third promises something which ought not to be promised and which might prove an unwise move; the fourth violates the principles of sound credit extension.

The book may be recommended on "Sales Management," not on "Bank Management."

W. G. MEADER

*The A B C of Accounting*, Stanley Edwin Howard,  
Princeton University Press, Princeton, 1929.  
xvi—302 pp.

By this time the teaching of accounting has broken the bonds of the School of Commerce and definitely established itself in various other curriculums of our universities. It has claimed a rightful place alongside such recognized liberal arts subjects as Principles of Economics, Money and Banking, and Labor Problems. (See James A. Campbell's article in the June issue of the *ACCOUNTING REVIEW*).

It is with the intention of clarifying accounting concepts and references encountered by students of economics in the arts curriculum that this text has been written. The author's exposition of the technique and principles of accounting is unusually easy to read and understand. He begins with the fundamental concepts of accounting theory—double-entry bookkeeping and the business entity—and explains their relation to the basic accounting statements. Such interesting paragraph headings as "Characteristics of well prepared balance sheets" are frequently encountered. The "expansion of the balance sheet into a simple ledger" leads to a discussion of the formal bookkeeping records and forms—from the minimum prerequisites to the more complex labor saving devices employed.

Functions of the physical inventory, the nature of prepayments and accruals, and the distinction between capital and revenue charges are related to the trial balance and accountant's work sheet. The problems presented by wasting assets are completely yet concisely reviewed. Methods of computing depreciation with emphasis placed on the importance of personal judgment make up one of the most interesting sections in "The A B C of Accounting."

Though most risks concomitant with business enterprise are cared for by contractual arrangements, Professor Howard points out that sometimes the enterprise carries insurance by means of reserves. An example of this appears in the reserve for bad accounts. Such methods entail accounting devices and procedure important to understand. The different types of reserves are distinguished as between "(1) reserves whose credit balance values offset specific asset values or asset values in general (2) reserve accounts whose credit balances represent liabilities; and (3) reserve accounts whose credit balances contain proprietorship values." Each type is analyzed, its use cited, and an example presented. Related to reserve accounting is the subject of Funds. Under this heading "methods of planning and accumulating special funds" are discussed.

Chapters are devoted to the subjects of Cost Accounting, Interest and Discount on Short Term Notes, and Interest on Bonds. An excellent summary of cost accounting concepts makes clear the accountant's conception of what constitutes manufacturing overhead costs. The author's theory regarding the subject of Interest and Discount on Short Term Notes is questionable in the light of common practice. His statement on the subject conveys the idea that the cost of discounting non-interest bearing notes accepted in payment for goods sold is a proper deduction from sales. However such problems indicate to what refinement and complications accounting principles may be carried. The chapter, Interest on Bonds, is another accounting highlight and interesting ideas are presented therein.

The final chapters deal with the disposition of income and the interpretation of financial statements. "Value" finds its place in the accountants' and the economists' definitions. Financial ratios of importance are enumerated and each is competently interpreted.

Exercise material coordinated to each chapter concludes the book, and should prove invaluable if working out solutions supplements the reading of the text. Finally, it may be said "The A B C of Accounting" should prove stimulating and enlightening reading to the liberal arts student who is seeking a working knowledge of accounting theory.

WILFRED REITS

*Putnam's Economic Atlas.* Edited by George Philip and T. Swinborne Sheldrake; New York, G. P. Putnam's Sons; London, George Philip & Son, Ltd., 1928. xv—112 pp. colored maps and charts, 33 pp. commercial compendium of the commodities of trade and industry, 17 pp. of supplement.

This atlas, originally published in London under the title of "Chambers of Commerce Atlas," shows, as the name implies, the geographic distribution of economic and commercial data; not the political, and physical phenomena of the earth's surface familiar in the usual atlas. In this respect the atlas is unique among the large atlases of the world. Its 112 colored plates and diagrams, together with explanatory text, constitutes a systematic survey of the trade, resources and communications of the world.

The atlas consists of five parts and the maps are in color. Part I gives the distribution of population, trade, communications, water power, and similar phenomena for the world as a whole; Part II deals with the communication and transportation by continents and oceans; Part III shows the distribution of agricultural, animal and mineral products, principally by dot maps, for the whole world and by regions; Part IV shows the industrial and commercial development of the various countries of the world; and Part V is a glossary of the commodities of trade and industry. The maps are clear, the color work pleasing to the eye and effective in showing world distributions, while the accompanying graphs, diagrams and text are helpful supplements to the maps.

Although the atlas is strictly confined to economic distribution, on most of the maps political boundary lines are shown in light outlines. As a supplement to the usual type of political and physical atlases this should be of real service to the student of world economics and world trade. It will not displace a good world atlas of political and physical geography, but should be used with, and as a supplement to, such an atlas.

G. B. ROORBACK

*Industrial Balance Sheets,* by Myron M. Strain. Harper and Brothers, New York, 1929. viii, 182 pages.

The general nature of this book is indicated by its sub-title, "A Study in Business Analysis."

In his "Foreword" the author states that he is not attempting to add to the already accepted theoretical principles underlying the analysis of financial statements, but expresses the hope that he may be able to lay convincing emphasis upon those principles that have proven dependable, and to warn against those by which the analyst might easily be led astray.

The book comprises ten chapters, with titles as follows:

The Materials of the Balance Sheet  
 Valuation and Verification  
 Preparing the Balance Sheet for Analysis  
 Internal Balance Sheet Relations  
 The External Tests  
 The Informal Indicators  
 Ratio Variation—in Principle  
 Ratio Variation—in Practice  
 Complete Accounting Reports  
 Sundry Refinements, Consecutive Analysis,  
 Analysis Files

Each chapter is followed by a series of questions and problems based upon the material just covered.

The first three chapters are devoted chiefly to a review of (1) definitions of accounting terms, (2) elementary accounting principles, and (3) the functions of an auditor. The author expresses some doubt in his Foreword as to the necessity for the inclusion of this matter. The reviewer is of the opinion that, on the whole, the decision should have been in the negative.

This material, however, contains a number of sound suggestions, which although not new, are deserving of the emphasis which Mr. Strain lays upon them.

The author (page 6) criticizes the usual method followed by analysts of eliminating goodwill and other intangible assets. He argues that "these intangibles not infrequently are the result of a money purchase and may be the most valuable going-concern property in the business." Again (page 9) the author insists that the term "surplus" should be restricted to that portion of the net worth that can properly be distributed as dividends, and that any element of net worth not so distributable should be otherwise described. In his discussion of the propriety of an auditor's showing values in excess of cost, the author suggests (page 24) that "in order to justify a write-up, three rules should always be regarded strictly:

1. It should be based upon an actual appraisal by responsible and disinterested appraisers.
2. The credit arising from the revaluation of the property should be unmistakably distinguished from profits; and
3. Allocated to an account which, in a corporation, will render it unavailable for distribution in dividends.

The author's statement (page 9) that bonds and long-term notes running more than one year are always to be excluded from current liabilities even though they actually mature less than a year from the date of the balance sheet will probably not be generally accepted by accountants. The same may perhaps be said of the author's opinion regarding prepaid expenses. He rigidly maintains that these items must always be treated as current assets.

Beginning with Chapter IV, the author takes up in earnest the task which he had set for himself. He discusses first the present use by analysts of the

various ratios deduced from the balance sheet and the profit-and-loss statement, and criticizes severely the present tendency to rely overmuch upon the average ratio standards. "Several circumstances," he declares (page 62), "may exist in any given case which will make them wholly inapplicable as indicators of solvency and paying capacity." He finds it necessary therefore (page 76), to "examine a procedure for reconciling the frequent and puzzling divergencies between the conclusions of ratio standards and observable facts."

At this point the author—in spite of his modest implication at the outset that he had no new principles to suggest—uncovers (page 83) a whole battery of "Eleven Informal Balance Sheet Indicators," with which he proceeds to demolish the apparently impregnable breastworks which he had just previously constructed for his men of straw, "Reed, Strauss & Co.," by the use of standard ratios of unquestioned respectability. The "Indicators" are:

1. Cash position
2. Informal comparison of accounts and notes receivable
3. Informal comparison of inventories and receivables (in lieu of sales not given)
4. Availability of fixed assets as credit resource
5. Adequacy of depreciation reserves
6. Entangling alliances with affiliated corporations
7. Informal comparison of accounts payable with inventory
8. Nature of and possible security for notes payable
9. Informal comparison of accounts and notes payable
10. Provision for expenses accrued
11. Earning capacity as indicated by surplus

The author's summary (page 90) of the result, is as follows:

1. Favorable Indications  
 Internal ratios  
 Test ratios  
 Efficiency ratios
2. Unfavorable Indications  
 Cash position nil  
 Negligible accounts receivable  
 Equities for unsecured creditors nil, because  
 (a) Notes are pledged  
 (b) Inventories are either pledged or dubious  
 (c) Fixed assets are pledged

"Every ratio seems entirely adequate, and yet it must be obvious that Reed and Strauss, Inc., are a purely speculative credit risk."

And now, flushed with the victory over ratios, just chronicled, the author boldly asserts his defiance of industrial averages (pages 96 and 97):

"For these reasons it does not seem prudent to accept any of the industrial averages so far de-

veloped, nor, from a general appraisal of the premises, does it seem reasonable to hope that more successful ones can be developed." And a little later he declares (page 111): "The peculiar conditions found in the various industries make differing requirements as to inventories, as to credit terms, and as to investments in fixed assets. These requirements are, in some cases and to varying extents, altered, evaded and nullified by the individual policies of the organizations engaged in each industry."

In the reviewer's opinion, Mr. Strain has performed a real service in calling attention to the fact that a blind reliance on ratios and averages is more dangerous than to make no use of them whatever. No one will, of course, seriously question the wisdom of accumulating the largest amount possible of facts relating to industries of every kind, and of analyzing this material intelligently for the purpose of ascertaining whatever general truths are latent therein. Only in this way has science grown, through the centuries. But it is equally obvious that the results obtained must be used intelligently and must not be relied on to the total exclusion of other factors which are vitally pertinent in any given case.

The reviewer wishes to record his emphatic agreement with the suggestion made by the author in one of his concluding chapters (page 148), namely, that a condensed profit and loss statement be regularly requested, along with the balance sheet, whenever credit information is sought. It appears somewhat absurd to attempt to piece together scraps of information gleaned with difficulty from the latter statement when all the facts of importance relating to the progress of a business for a given period will be found, expressed in detail, in the income statement and an appended statement of surplus.

In the final chapter the author makes a considerable number of valuable suggestions regarding the "trend analyses" that may be derived from a series of successive statements, and in regard to the matters to be taken into consideration in planning the forms for the analysis files.

The book will be a welcome addition to the library of every individual who is concerned with the granting of credit. He will perhaps discount some of the over-enthusiastic assertions of the author, but will find himself, as a result of the author's suggestions, inclined to lean less upon mathematical data exclusively, and more upon the results of his own reasoning.

EDWARD J. FILBEY

*Problems in Industrial Accounting.* Thomas Henry Sanders, with collaboration of Paul Brown Coffman. McGraw-Hill Book Co., New York, 1930. 816 pages.

This book is of a type more familiar to teachers and instructors than to professional and industrial accountants. It may be compared to a laboratory manual as used in connection with the physical sciences. The object of the book is to provide a number of instances or examples, classified and arranged so as to exhibit the underlying working of certain principles, and this has been successfully accomplished.

The range covered is a large one, examples being provided to demonstrate the uses of industrial accounting in the three main divisions of general and financial administration, production, and sales. Production cost is then discussed under the three headings of material, labor, and expense, thus naturally leading up to the consideration of actual mechanism, the costing of orders, budgets, reports, etc. A third section deals with more advanced problems arising in the course of practice, considerable attention being given to overhead or burden applications. The fourth part is somewhat miscellaneous, including such topics as the recording of equipment charges, depreciation, plant orders, etc., the question of by-products, influence of market values on cost, selling and administrative costs and cost accounting in the banking business. A final section is devoted to questions of organization and industrial control, including cost control in typical industries.

That the book is exceedingly well designed for the intended purpose is unquestionable. It is a mine of well arranged data of which the instructor would be able to make effective use. The practical accountant would also find in it much food for thought, though, of course, its value to him would be diminished by the peculiarity common to all laboratory manuals—that of suggesting most interesting problems, and then remarking "what would you do about it?" Though the reviewer has had a somewhat lengthy experience of industrial accounting, he would hesitate a long time before laying down the law on some of the situations disclosed. This, however, is no reproach, as the object is to promote thought rather than to give solutions.

A survey of the eight hundred pages of this volume does, however, give rise to rather pessimistic reflections on the general situation. In his preface the author says that "the general recognition and acceptance of cost analysis . . . has been followed by two outstanding developments: one is the application of similar methods to all phases of business activity . . . the other is the growing informality and diversity of method by which the results are sought." Assuming that the exhibits are taken from actual practice, it must be confessed that "informality and diversity" are far too prominent as characteristics of modern practice. Speaking of manufacturing cost accounting alone, it may be asserted that nearly all types of business present essentially similar problems,



capable of being solved in similar ways and by similar procedure. There is, in fact, far too much ingenuity shown in individual cost systems. Each executive gives rein to that remarkable delusion "my business is different" and instead of seeking to conform to standard ways of looking at basic facts, tries to be as individual as possible in his point of view. That the result is too frequently a complex mess is perhaps not far from the truth.

In the last twenty-five years cost accounting has unquestionably received more attention than formerly, but it appears to the reviewer that what is needed most is a course of instruction for executives, to teach them the fundamental ideas of the productive process, which after all are few and simple. For the most part individual peculiarities of any business are only excrescences or extra growths on a main structure which is much the same for all. The total activity of a plant consists (1) of actual productive processes (2) of services maintained to enable these processes to function. Overhead is the cost of preparedness, not of actual work. It occurs to the reviewer, in looking over the exhibits in this book, that great simplification could be effected were this simple viewpoint generally adopted.

Industrial accounting is, in fact, very far from an exact body of practice at the present time, and perhaps does not show marked signs of settling down to that condition. The case cited on page 173 of the present book illustrates this general vagueness. It is the case of a textile mill, worried to know whether its overhead should be distributed in one of six different ways. Considering that the textile industry is no very modern development, one would really suppose that the executives concerned had had opportunity to make up their minds, on thoroughly investigated grounds, as to a standard method. The application of principles does not seem to have progressed very far in this instance, while diversity of method does not afford the solution of the problems involved.

It is precisely because of this diversity that a book of this kind is valuable, since it does call attention to the existence of common problems in diverse industries, recognition of which is the only true path to ultimate straightening out of the tangle. By degrees the common problem rather than the individual solution will be seen to be the important thing. Meanwhile the only thing is to group and classify individual solutions as this book enables the student to do.

The book is provided with an index of some 600 items, but might perhaps have been extended with advantage. Interest as a Cost is indexed on page 646, but apparently in error. On page 20 perpetual inventory is mentioned, but appears to apply merely to a stores ledger, unaccompanied by actual periodical inventory work, inasmuch as the problem presented is whether such perpetual inventory should be checked physically. This illus-

trates one of the reasons why industrial accounting does not progress, namely the misuse of terms. Perpetual inventory as the term itself implies should be applied only to those cases where actual stocktaking is continual, not to cases where mere bookkeeping of stores items is in question. Nothing is more exasperating in accounting literature than the light-hearted way in which a technical term is seized and made to do other duties. If such a practice occurred in chemistry or physics confusion would be as frequent in those bodies of knowledge as it is in industrial accounting. The error originated, presumably, in the exhibit itself, but should have been pointed out by the author.

A. HAMILTON CHURCH

*Fischer, Guido: "Die Kurzfristige Abrechnung."*  
C. E. Poeschel Verlag, Stuttgart 1930. 140 pp.  
R M 7.50.

The author has written this book for the purpose of presenting the increasingly popular practice of giving monthly or even weekly financial statements. Interest in this topic has increased in Germany since the publication of "Beiträge zur Theorie und Praxis der monatlichen Erfolgsrechnung," a publication that was the result of a price competition suggested by Professor Schmalenbach.

Fischer demonstrates how the desired results can be had by using either the bookkeeping records to obtain a balance sheet, or the cost records to obtain a profit and loss statement. The use of statistics enables the accountant to estimate certain significant factors which, because of the brevity of the period and limited information, would ordinarily not be commensurable. The advantage of standardization of method in taking inventories is also emphasized.

A valuable feature of the book is the four page bibliography, representing a very complete collection of all German publications in this field. The fact that only German sources were used, however, deserves serious criticism.

ROBERT M. WEIDENHAMMER

*Short Cuts in Business Calculations*, by Carl J. Becher. Carl J. Becher, Advisory Accountant and Auditor, Appleton, Wisconsin, 1929. 101 pages.

The preface states the purpose of this little manual as follows: "In presenting this book as a guide to the bookkeeper, the practical business man, the accountant, or to those who must grapple with the more difficult problems arising in business, the author has aimed throughout to provide a practicable and workable guide to solve their problems with accuracy and precision. The methods used are simple, easily learned and yet lend themselves to solve any problem that may arise. The extended observance of the author has led to the conviction that a book especially designed to achieve this result is really necessary."



The first thirty pages of the book are devoted to a discussion of addition, subtraction, multiplication, and division. Certain interesting "Short Cuts" are revealed though it is unlikely that all of them are actually time savers.

Brief comments on subjects too numerous to mention comprise the remaining seventy pages. One page is devoted to each of the following: Working Capital Turnover, How to Estimate the Value of Inventories, The Decimal Point, Aliquot Parts, Cost and Selling Marks, and Taxes. The discussion of Depreciation occupies two pages. In introducing the subject, the author states, "There are many different methods of computing depreciation. Some of these methods are very difficult as they require an understanding of algebra. A few of the most common and practical methods will be explained." The methods presented are the Straight Line Method and the Sum of the Years' Digits Method.

According to the preface, "Only such tables have been included in this book as are deemed necessary to help understand the problems presented." The tables include: Days between Two Dates, Equivalents of Trade Discount, Rate of Income on Stocks, Six Per Cent Interest, and Weights and Measures in addition to an Improved Multiplication Table.

In general, the appearance of the book is satisfactory though there is some evidence of carelessness in proofreading. On page 40, for example, a note is *discontinued* rather than *discounted*. On page 92, current assets of \$6,000 and current liabilities of \$2,000 indicate 3 to 2 working capital ratio. The expression "short cuts or formulas" appears in the preface.

Because the problems presented and solved are relatively very simple, it does not seem reasonable to expect that the book will prove to be of any great value to accountants or "to those who must grapple with the more difficult problems arising in business." It should be of service to business college students and to certain bookkeepers and clerks.

With the substance of at least one sentence, even the mightiest accountant or business man dare not disagree: "There is no royal road to always get a trial balance at once."

University of Iowa

S. G. WINTER

*Mechanics of Accounting.* Leo A. Schmidt. Prentice Hall, New York, 1929. 230 pp.

Although there appears to be a considerable amount of agreement upon the methods of teaching intermediate and advanced accounting, wide differences of opinion exist relative to the approach to elementary accounting. Lectures, text book assignments, class discussion, problems, and sets represent the five divisions of the course. Nearly all educators believe each of these five has a part to play in the process of learning. The differences of

opinion center around the emphasis to be laid upon each one. Some believe the set is the most important. Others favor the class discussion. The predominating factor is still another to someone else. In a few cases the view is held that each of the five is fundamental and essential.

In a book before us problems and class discussion are looked upon as of prime significance, with sets, lectures, and so-called theoretical text assignments viewed as possessing questionable merit. True enough the book is called a text book rather than a problem book, but since the text material is boiled down to a few descriptions and statements for each topic, the book is essentially one of problems. As stated in the preface: "The chief contribution to the pedagogy of accounting, however, lies in the use of a virtually pure problem method. It is the author's experience that the mere reading of a text or the listening to a lecture leaves the student of accounting with very little permanent benefit; that, practically speaking the student learns only by the actual working out of concrete problems illustrating the principle to be learned. Clearly, there was much value in the old apprentice method of learning—but too often such a method was doing without understanding, and therefore weak. Much modern teaching has gone to the other extreme and sought to bring the students to understanding without doing, and this is psychologically just as weak. It is the author's contention that the most effective learning is accomplished by doing, provided that the work done is of the kind to best facilitate the learning. . . . In accounting this clearly indicates a problem method, with problems, created for the single purpose of learning, constituting the work to be done by the learner."

The balance sheet approach has been followed not only as an introduction but in developing the entire subject presented. Beginning with the balance sheets, transactions are quickly introduced in "T" accounts, to be followed by expense and income transactions and the trial balance. The profit and loss statement is considered at this time, to be followed by accrued and deferred items, again all treated through the ledger. The introduction of the journal having been delayed the author decides to finish books of original entry once and for all by immediately considering controlling accounts, the special journals and the special journals with extra columns.

The book from now on is divided into sections, as follows: Special Problems including commercial paper, uncollectibles and working sheets, Partnerships, Corporations, Depreciation, and finally, Analysis and Interpretation of Accounts. A practice set for a wholesale house concludes the book.

The reviewer is impressed with the amount of valuable material that has been gathered together here and with the author's familiarity with the literature of the subject. The book if supple-

mented by extensive outside reading, lectures and additional sets should prove a valuable part of the course. As one who believes that each of the five phases of the subject, above referred to, are almost equally important, the reviewer feels the treatment in itself is rather narrow. Nevertheless, the book is an important contribution to the literature of elementary accounting.

WILLIAM S. KREBS

*Inheritance and Other Like Taxes.* By Albert Handy. New York, Prentice-Hall, 1929. Pp. 492.

The phrase "other like taxes" in the title means other death taxes, and it is the whole field of death taxation which the author has undertaken to cover, a task for which Mr. Handy's years of study have especially qualified him. The treatment is through discussion of principles rather than description of the taxes of particular states. Under each of the topics into which the whole subject naturally divides itself we find presented the legal definitions of terms, the general features of the statutes (chiefly of the American states), and the principles laid down by the courts. It is in this last department that the most noteworthy contribution is made. While the present reviewer is hardly the one best qualified to judge, it would appear that upon virtually every important issue in death taxation the reader should be able to find here the present status of judicial opinion, supported by citations to a most impressive list of cases.

From this point of view the treatment is thoroughly comprehensive. On the other hand it is evident that the author has concerned himself almost exclusively with the legalistic aspects of his subject. Chapter I, dealing with elementary definitions, which the author modestly suggests should be read only by "those having no knowledge whatever of death taxes," impresses the reviewer as well worth the perusal of all except the technically expert. But the seven page chapter on "general considerations and historic survey" (Chapter II) is obviously superficial. The eleven pages devoted to "economic theories" (Chapter III) are, in the author's own estimation, only "suggestive." They throw no light upon the many fundamental and interesting questions of economic theory and social policy bound up in the subject of death taxation.

It is after the author has disposed of the first seven chapters comprising his "Part I, General," that he really settles into his stride. From here he proceeds, with the confidence born of full knowledge, through the maze of intricate details in which the law of death taxation is involved. While the study is evidently designed primarily to serve the legal and administrative practitioners, any student of death taxation is certain to find here a welcome aid to the understanding of this difficult subject. The book is well arranged for ready reference to

particular topics, and the list of cases, the collection of New York forms, and the comprehensive index add to its usefulness.

FRED ROGERS FAIRCHILD

*History of Wills: Descent and Distribution, Probate and Administration,* by Alison Reppy and Leslie J. Tompkins. Callaghan and Company, Chicago. 1928. Pp. 427.

This noteworthy book is divided into two portions. The title of the volume reflects the contents of Part I, this consisting of 181 pages, Part II, composed of the remaining portion of the book, consists of a chronological presentation of the most important English statutes relating to the subjects discussed historically in Part I. No American statutes are mentioned due to the fact that the Statutes of Wills, as found in the several states, except for variations based upon local conditions, are patterned largely after the English statutes.

Although the preface so states, it is nevertheless apparent that the writers of this volume were assisted in their endeavors by William F. Walsh, the author of a History of English and American law, a book which needs no introduction to students of legal history and philosophy; the History of Wills reflects closely the method of presentation adopted by Professor Walsh.

In order to understand the law as it is today, some knowledge and appreciation of the historical and statutory background is essential; undoubtedly, however, this contemplates the graduate student rather than the undergraduate. The History of Wills is another landmark in the development of a literature of this type.

This interesting volume informs us that wills were known in early Egypt thousands of years B.C., and that the Code of Hammurabi contained full provision for succession. But what appears even more interesting is that the early Germans had no conception of wills. Remembering that the Germans were Aryans, who, in part, at least, originally passed to the British Isles and there, based upon their homely maxims, developed what today we know as Common Law, the conclusion arises that the right to inherit, as well as the right of testamentary disposition, are not natural rights, but, rather rights acquired. Thus, apparently, we have another example demonstrating that our Aryan ancestors were somewhat lower in the scale of civilization at one time than other peoples, even though now the position has been reversed.

We learn that the canon or civil law exercised a marked influence upon testaments, many ideas therefrom later becoming a part of the Common Law. It is interesting to notice, also, that the Statute of Frauds, as passed in 1676, contained sections supposed to meet the dangers underlying the use of wills and testaments, especially since our contact with this Statute primarily comes in rela-

tion to written contracts. The Statute emphasized the use of the written will.

To the reviewer, the first portion of this volume was as interesting reading as a work of fiction; in fact, it was impossible to put the book away until after the first part had been read completely and carefully.

GEORGE E. BENNETT

*Problems in Auditing.* By Arthur W. Hanson with the Collaboration of Paul B. Coffman. McGraw Hill Book Co., Inc. New York, 1930. xli—754 pages.

"Problems in Auditing" has for its purpose the introduction of a series of business conditions with the intention of stimulating discussion and thereby portraying the principles of Auditing. It presents the point of view of experience. Nothing can be substituted for experience, but the latter may be organized, arranged and inserted into the curriculum as a substitute for field work, and, thus, not only be a guide for the future, but may also result in the saving of time. One would need many years of field work before meeting all the situations introduced in these cases.

In Part I appear problems dealing with the scope of auditing, its functions, the responsibilities of its practitioners, fraud and falsification. Part II presents auditing practice and procedure; actual problems dealing with the auditing of cash, petty cash, accounts receivable, inventories, securities, fixed assets and deferred charges, and other problems introducing actual conditions the auditor faces in the balance sheet audit of liabilities, capital stock, reserves, surplus, incomes and expenses. Of particular significance here there may be mentioned the fact that most problems in each group are taken from different concerns. To tie them together, however, the excellent procedure has been followed of introducing under each group a problem taken from one department store. In Part III the case system is found at its best, there appearing the complete set of working papers for a lumber and pulp company together with the report and several typical certificates and reports of auditors. Part IV introduces certain special problems regarding consolidated balance sheets and balance sheets giving effect to financing.

Accounting problems are largely of the mathematical type. Auditing problems are essentially of the non-mathematical type. Quite wisely the author has introduced the much neglected, but highly significant, philosophical aspects of the subject. A knowledge of Auditing technique on the part of the student is presupposed. Thus the point of view of the junior may be neglected and that of the senior stressed in its place. The student is taught

to think through a situation, to analyze its component parts and to combine it all into a logical and sound answer. After all, the most successful auditor is the man with the best ideas. The method of the book is essentially one of training the student to think.

The reviewer has high regard for the industry and care necessary to gather and organize the material, and feels that the book is a splendid addition to the literature of auditing.

W. S. KREBS

Voss, Wilhelm: "*Handbuch für Das Revisions- und Treuhandwesen.*" C. E. Poeschel Verlag, Stuttgart, 1930. RM. 18.50. pp. 512.

In attempting to describe the present status of public accountancy in Germany and introduce the reader to the main problems that this young and rapidly expanding profession is facing, the author has undertaken a task which has never before been tried in Germany.

The material presented does in no instance overlap other literature on accounting and financial statements, a fact which is truly commendable.

The book is made up of two divisions: "The Profession" and "Practice." After a short but complete historical survey, the legal status of public accountancy and the various organizations of the profession are described. Conditions in Germany are compared with the situation in other countries, England being represented as a country in which the state of the profession is most ideal. Chartered and the incorporated accountants enjoy no more of a legal monopoly in England than do the licensed accountants in this country or Germany, anyone with a proper training being permitted to practice, but the reputation of the chartered and the incorporated accountants is so great that they have little to fear from the competition of outsiders. The "Companies' Act" that demands the yearly auditing of financial statements of all corporations, has done much to enhance the position of the public accountant in England.

Conditions in America represent a rather varicolored picture when compared to those of England or Germany. But the author rightly comments on the very high standard of auditing and public accounting in this country and attributes it mostly to the close cooperation of university teachers and practitioners.

Other problems dealt with include such pertinent subjects as educational requirements, responsibility of accountants, fees, competition, and the future legal status of the profession.

The second part of the book deals with problems in auditing and the desirability of a statute similar to the "Companies' Act" in England, requiring yearly audits.

ROBERT M. WEIDENHAMMER

## UNIVERSITY NOTES

### BOSTON UNIVERSITY

Professor Henry J. Bornhafft is to be on sabbatical leave this year. Mr. James V. Toner is returning to the department after a year's absence.

Mr. Arthur W. Johnson, D.C.S., New York University, has been appointed assistant professor in the department. The following promotions were made in the department: Edward J. Hyland, assistant professor, Charles H. Cornell, assistant professor, Raymond L. Mannix, associate professor.

Mr. Cornell has been elected president of the Boston chapter of the N.A.C.A. A new text in elementary accounting by Goggin and Toner of this department will be off the press September 10.

### BROWN UNIVERSITY

Professor Hugh B. Killough has been granted leave for the year to become associated with Barrington Associates, Inc., research engineers of New York City. Dr. Nathaniel H. Engle of the University of Michigan has been appointed assistant professor of economics and is to take over Professor Killough's work for the year.

Mr. Paul T. David, fellow in economics and Mr. W. Harrison Carter of Harvard University have been appointed instructors. Mr. Alden J. Plumley of the University of California, Harry C. Banzhof, University of Pennsylvania, Howard M. Wilson, Brown University, Victor Abramson, University of West Virginia, have been appointed assistants in economics.

### UNIVERSITY OF CALIFORNIA AT LOS ANGELES

Mr. Paul A. Dodd, associate in economics, will be completing his work for the Ph.D. at Pennsylvania this year. Dr. Lewis A. Maverick is returning as lecturer in economics to assist in the fields of statistics and economic theory. Mr. Ira N. Frisbee was promoted to the rank of associate professor.

A division of Business Administration

has been created in the Department of Economics which will give courses in Advanced Accounting, Cost Accounting, Auditing, Personnel Management and Business Organization.

### UNIVERSITY OF CINCINNATI

Mr. R. Emmett Taylor has been promoted to the rank of Professor of Accounting and Business Law.

### UNIVERSITY OF GEORGIA

Mr. M. S. Cooley, C.P.A., leaves the department to go into public accounting practice. Mr. Lloyd B. Raisty is returning from a year at the University of Texas where he was pursuing graduate work.

### GEORGIA SCHOOL OF TECHNOLOGY

Professors Sanders and McClellan have devoted part of the summer to revising the syllabus for the course in Introductory Accounting. The accounting staff is making a study of the Georgia tax system which is to be revised this year. A study is also being made of cost accounting for cotton mills.

A new chapter of the N.A.C.A. was established this year in Atlanta. Georgia Tech. will be represented in its membership by Mr. Noel and Mr. Warren.

### UNIVERSITY OF ILLINOIS

Mr. C. B. Cox, assistant in accounting, is leaving to join the staff of Peat, Marwick, Mitchell and Co., Detroit. Mr. C. B. Larimore, Nebraska, and W. H. Stout, Illinois, will be assistants this year.

Professor Baily has just completed a practice set to accompany Scovill and Baily's "Elementary Accounting," Vol. II. Professor Lloyd Morey has been named chairman of the Federal Committee on Uniform Accounting and Procedure in Educational Institutions.

Two assistants, Mr. A. F. Frese and Mr. C. B. Cox, were successful candidates at the last Illinois C.P.A. examinations.



## UNIVERSITY OF INDIANA

Mr. Geoffrey Carmichael is to be an instructor in accounting this year. Mac-Millan and Co. is publishing in September an elementary text by Prickett and Mike-sell of this department. Mr. Prickett is now vice-president of the Indianapolis chapter of the N.A.C.A.

The School of Commerce is now admitting students from other accredited institutions who can submit 60 credits, including Principles of Economics, Elementary accounting, and English composition. Previous to this time the pre-commerce program was rigidly prescribed for all students.

## IOWA STATE UNIVERSITY

Professor Sidney G. Winter, head of the Division of Accounting, has been elected Iowa representative of the American Society of Certified Public Accountants.

## UNIVERSITY OF MARYLAND

Dr. W. H. Brown, recently of the University of Southern California, is now chairman of the Department of Business Administration with the rank of professor. The entire department is being re-organized and more courses in economics and accounting will probably be added to the curriculum.

Mr. Bernard T. Dodder, in charge of accounting, has recently opened offices in Washington, D.C., for the practice of public accounting.

## UNIVERSITY OF MONTANA

Dean E. C. Line is teaching in the summer session at the University of California. Professor Sanford is doing research work in accounting with the Montana Power Co., making a special study of the federal water power requirements.

The state association of public accountants was addressed recently by Mr. S. D. Springer, secretary of the Society of Certified Public Accountants.

## NORTHWESTERN UNIVERSITY

Professor H. A. Finney is resuming full time teaching in the department. Mr. E. C. Davies and Mr. W. H. Bamberg have been promoted to the rank of associate professor and Mr. C. M. Gillespie assistant professor.

The following new courses are being offered this year: Accounting Survey (no credit), Advanced Theory (a graduate course), and Systems I.

At the May C.P.A. examinations 14 of the 29 successful candidates had had their major training in accounting at Northwestern, including the gold medalist, M. L. Black. At the November examinations 6 of the 20 successful candidates were trained at Northwestern, including the silver medalist Albert Ferber. (No gold medal was awarded.)

## OHIO STATE UNIVERSITY

Mr. Robert E. Walden of Iowa State University is to be an assistant in the department this year.

The Ohio Hotels Association, Auditors Division, is holding quarterly meetings on the campus and research work in the hotel field will soon be undertaken in co-operation with the Bureau of Business Research.

## OHIO UNIVERSITY (ATHENS)

Professor Ralph Bechert will offer a course in Methods of Teaching Accounting. Mr. T. M. Wolfs will offer a course in "The Coal Industry," part of which will be devoted to coal accounting.

Registration fees in the College of Commerce have been increased this year.



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Fifteenth Annual Meeting

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